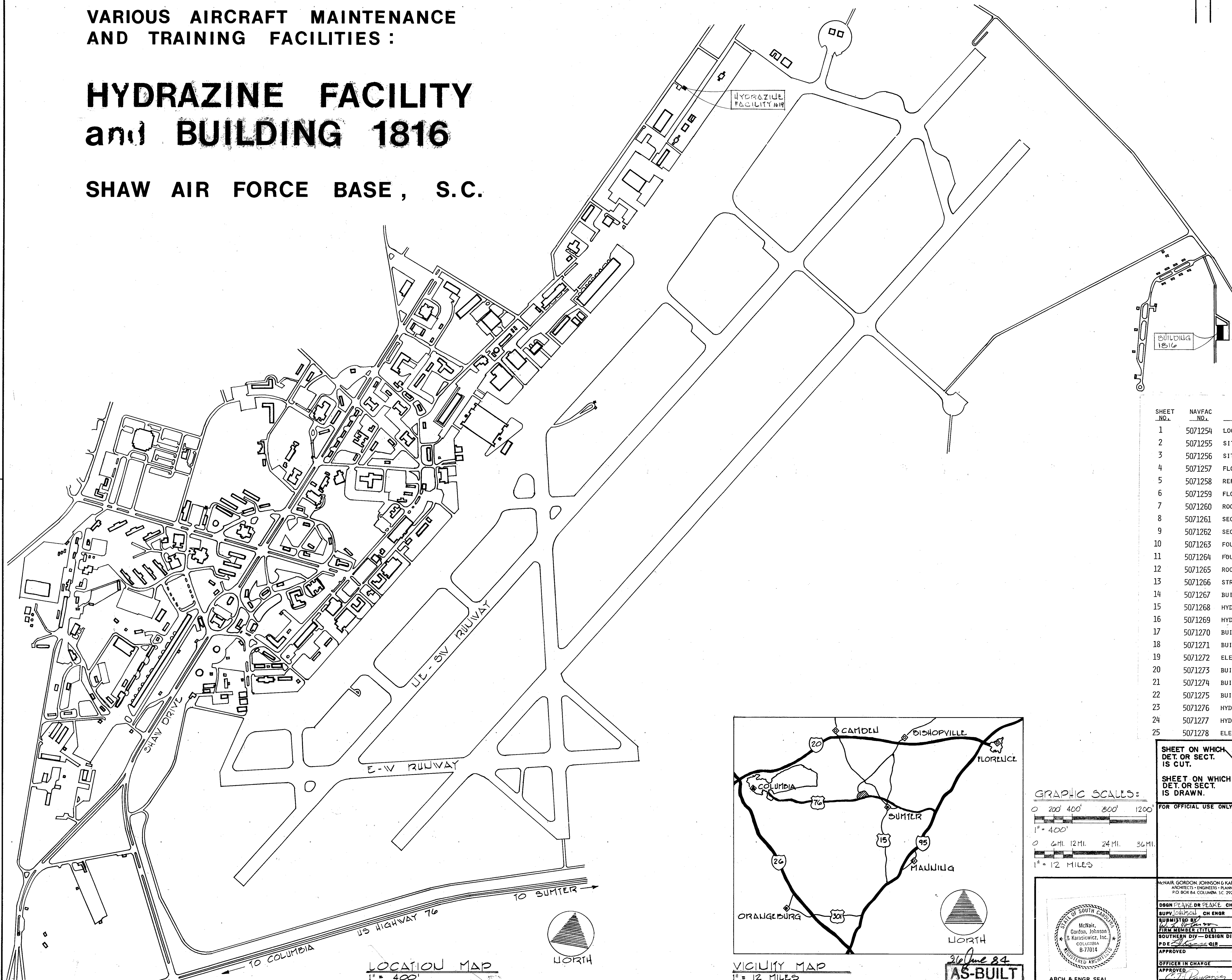


VARIOUS AIRCRAFT MAINTENANCE
AND TRAINING FACILITIES:

HYDRAZINE FACILITY and BUILDING 1816

SHAW AIR FORCE BASE, S.C.

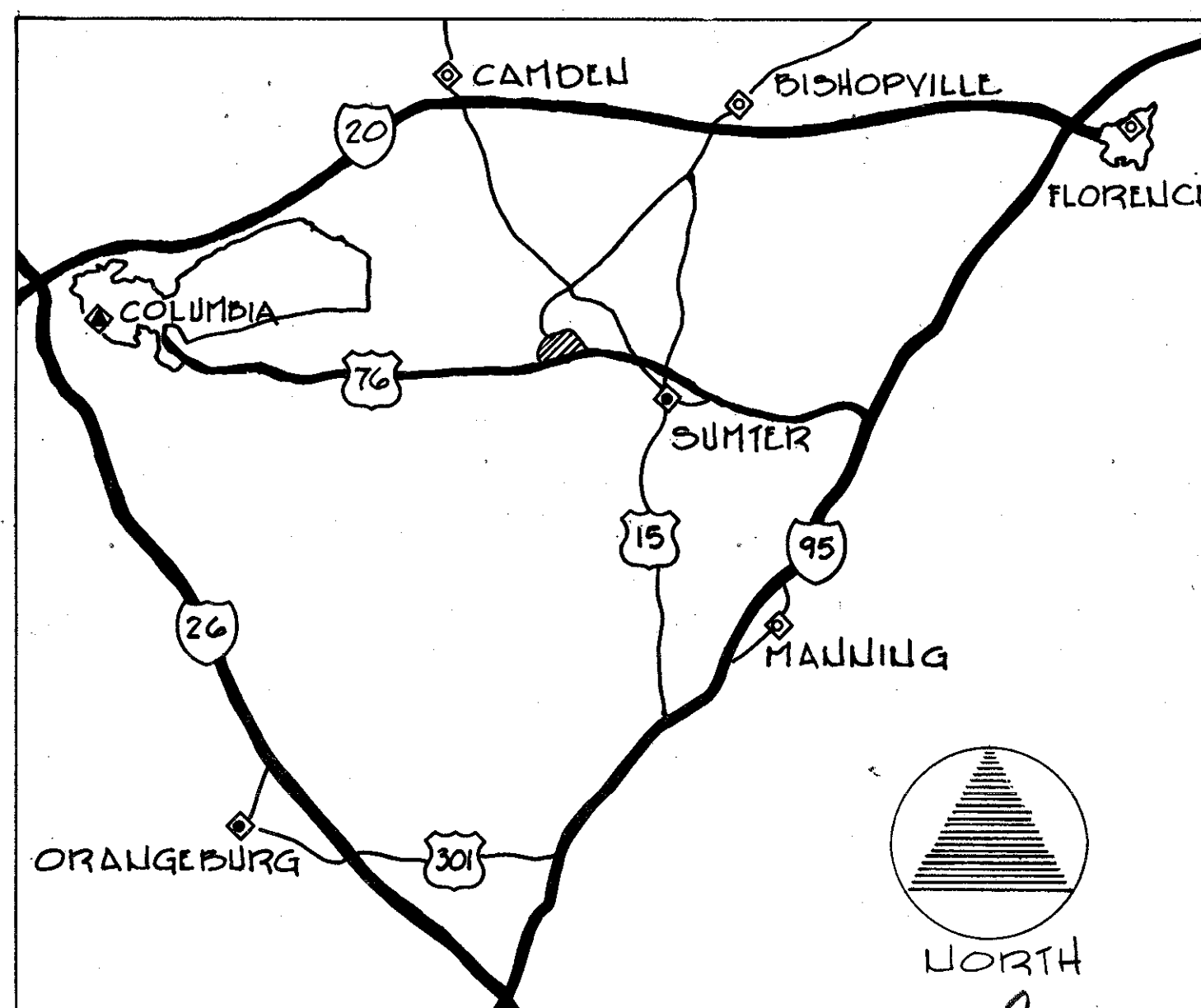
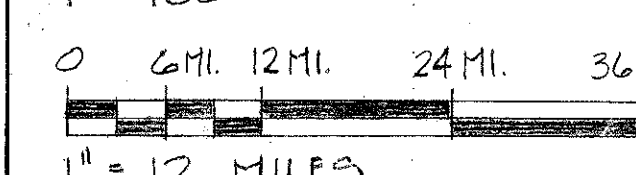
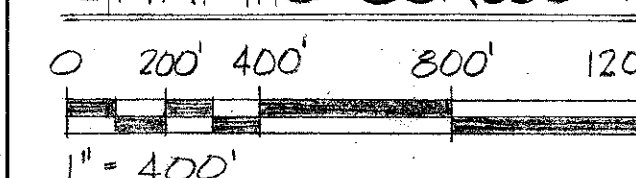
REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED



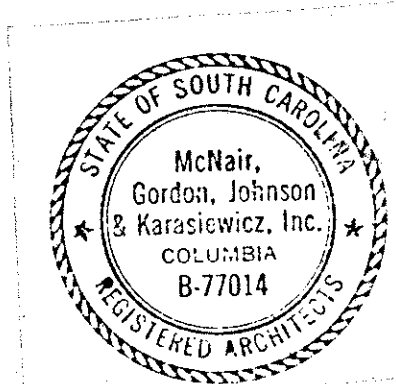
INDEX OF DRAWINGS		
SHEET NO.	NAVAC NO.	TITLE
1	5071254	LOCATION MAP, VICINITY MAP AND INDEX OF DRAWINGS
2	5071255	SITE PLAN AND DETAILS
3	5071256	SITE PLAN AND DETAILS
4	5071257	FLOOR PLAN, ELEVATIONS, SCHEDULES AND DETAILS
5	5071258	REFLECTED CEILING PLAN, SECTIONS AND DETAILS
6	5071259	FLOOR PLANS AND ELEVATIONS
7	5071260	ROOF PLAN, REFLECTED CEILING PLAN, SCHEDULES & DETAILS
8	5071261	SECTIONS
9	5071262	SECTIONS AND DETAILS
10	5071263	FOUNDATION AND ROOF FRAMING PLANS, NOTES & STRUCTURAL DETAILS
11	5071264	FOUNDATION PLAN, NOTES AND STRUCTURAL DETAILS
12	5071265	ROOF FRAMING PLAN & STRUCTURAL DETAILS
13	5071266	STRUCTURAL DETAILS
14	5071267	BUILDING 1816 PLUMBING FLOOR PLAN & DETAILS
15	5071268	HYDRAZINE FACILITY PLUMBING/FIRE PROT. PLAN, DETAILS & SCHEDULES
16	5071269	HYDRAZINE FACILITY, HVAC FLOOR PLAN, DETAILS & SCHEDULES
17	5071270	BUILDING 1816, HVAC FLOOR PLAN, DETAILS & SCHEDULES
18	5071271	BUILDING 1816, HVAC DETAILS
19	5071272	ELECTRICAL NOTES, SYMBOLS & DETAILS
20	5071273	BUILDING 1816 ELECTRICAL PLANS
21	5071274	BUILDING 1816, ELECTRICAL SCHEDULES & RISERS
22	5071275	BUILDING 1816, ELECTRICAL SITE PLAN & DETAILS
23	5071276	HYDRAZINE FACILITY ELECTRICAL PLANS
24	5071277	HYDRAZINE FACILITY ELECTRICAL PLANS & LIGHTNING PROT. DETAILS
25	5071278	ELECTRICAL DETAILS

SHEET ON WHICH DET. OR SECT. IS CUT.	SECTION OR DETAIL NO.
SHEET ON WHICH DET. OR SECT. IS DRAWN.	IDENTIFICATION SYMBOL FOR DETAILS, SECTIONS, & ELEVATIONS

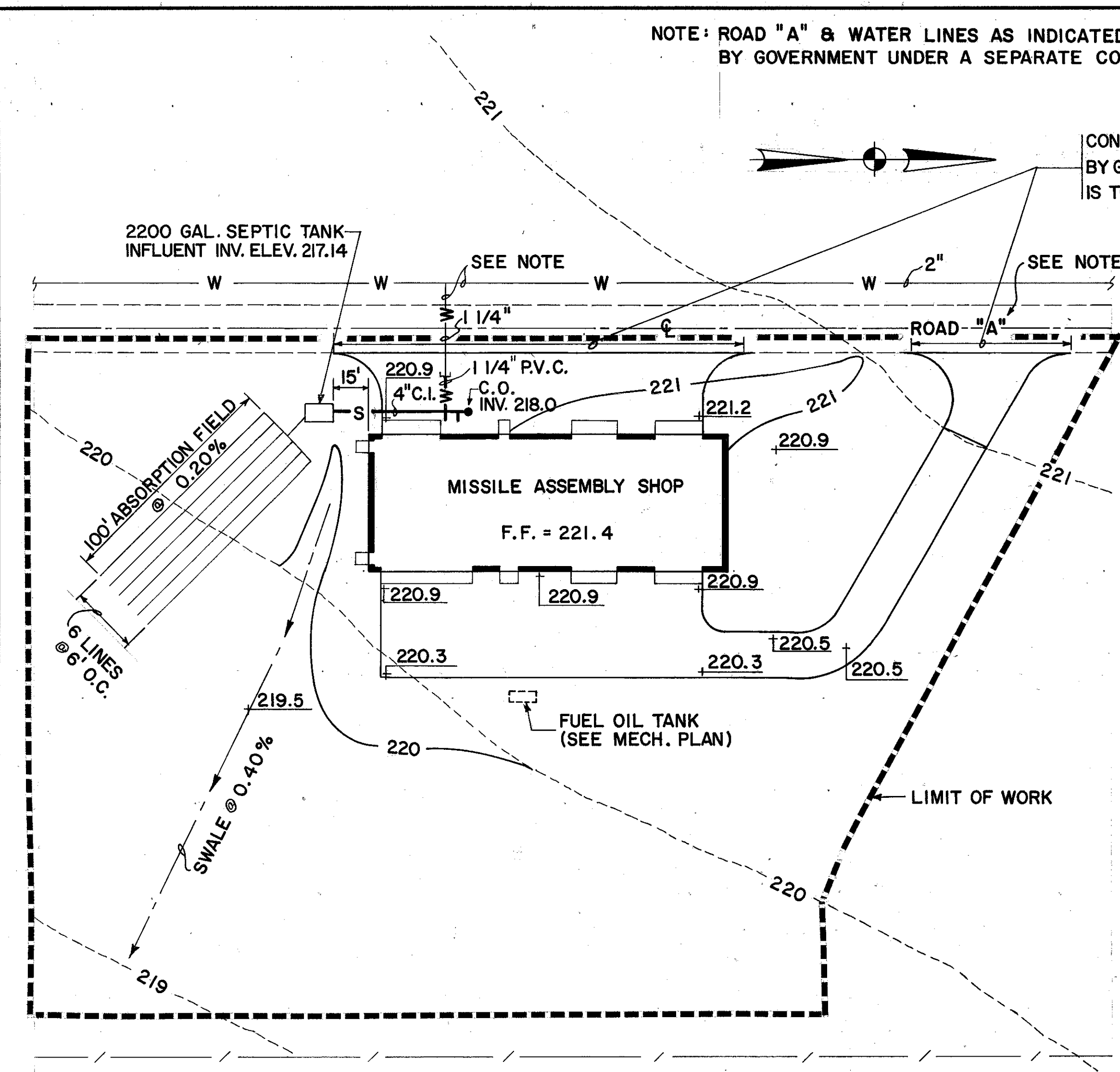
GRAPHIC SCALES:



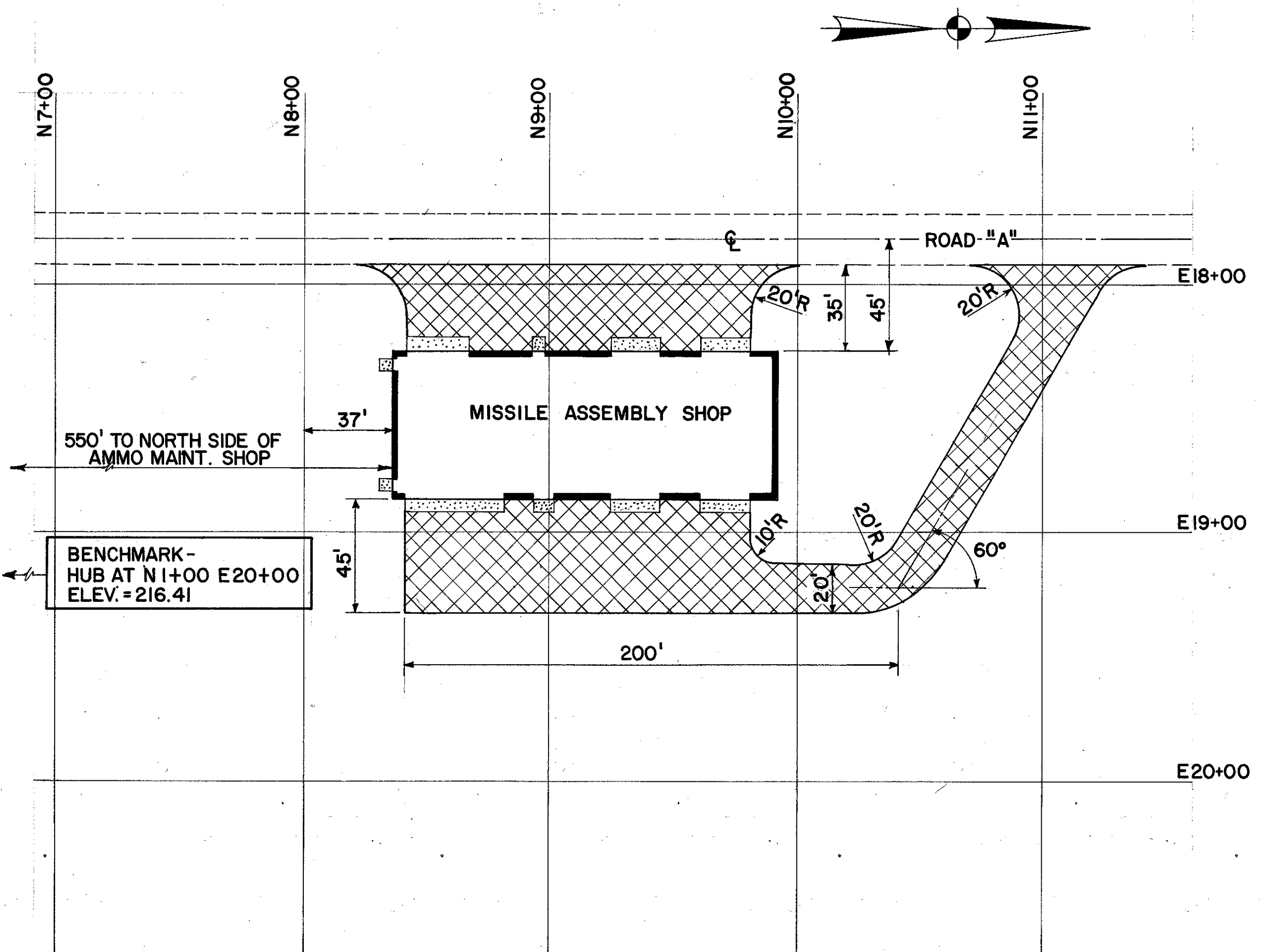
26 June 84
AS-BUILT



McNAIR, GORDON, JOHNSON & KARASIEWICZ ARCHITECTS - ENGINEERS - PLANNERS P.O. BOX 84, COLUMBIA, SC 29202		DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
DESIGN PEAK/DR PEAK/CHK/JOHNSON	SHAW AIR FORCE BASE	SOUTH CAROLINA	
SUPV/JOHNSON	CH ENGR	1619-HYDRAZINE FAC. & BLDG 1816	
SUBMITTED BY	DATE	LOCATION MAP, VICINITY MAP	
FIRM MEMBER (TITLE)	7/18/84	& INDEX OF DRAWINGS	
SOUTHERN DIV - DESIGN DIVISION			
P.D.E. [Signature]			
APPROVED	DATE	SIZE	CODE IDENT NO. NAVAC DRAWING NO.
OFFICER IN CHARGE		F	80091 5071254
APPROVED	DATE	CONSTR CONTR NO.	162467-80-C-0026
ED FOR COMMANDER, NAVAC	16/2/84	SCALE	AS NOTED SPEC 06-80-0026 SHEET 1 OF 25



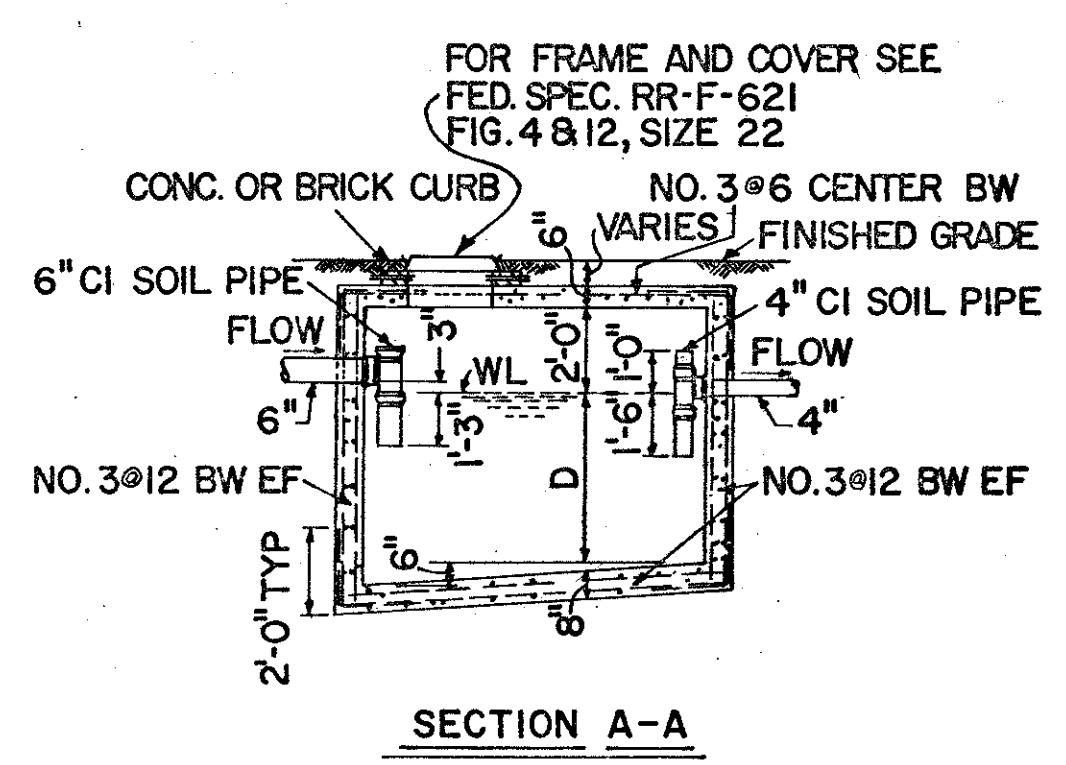
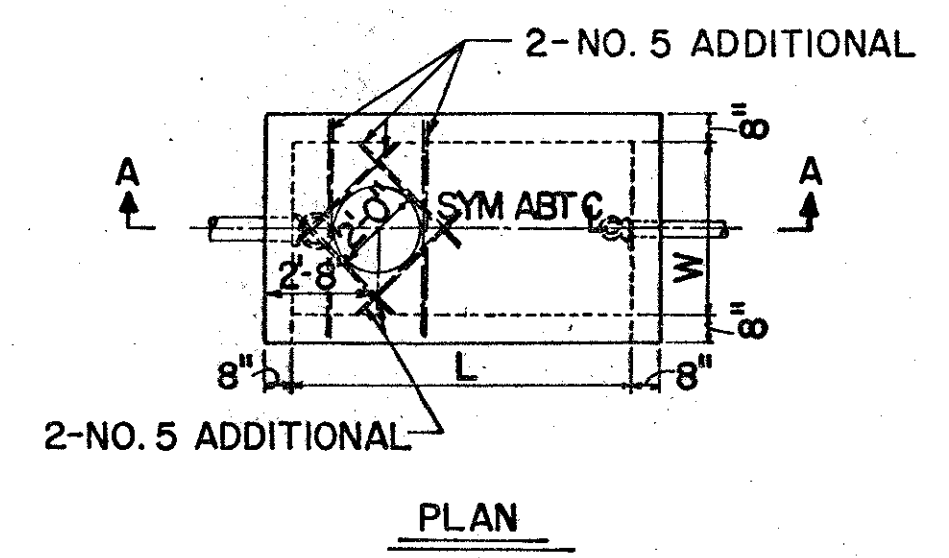
GRADING & UTILITY PLAN
SCALE: 1" = 40'



STAKING PLAN
SCALE: 1" = 40'

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE GRASSED AS PER SPECIFICATIONS.

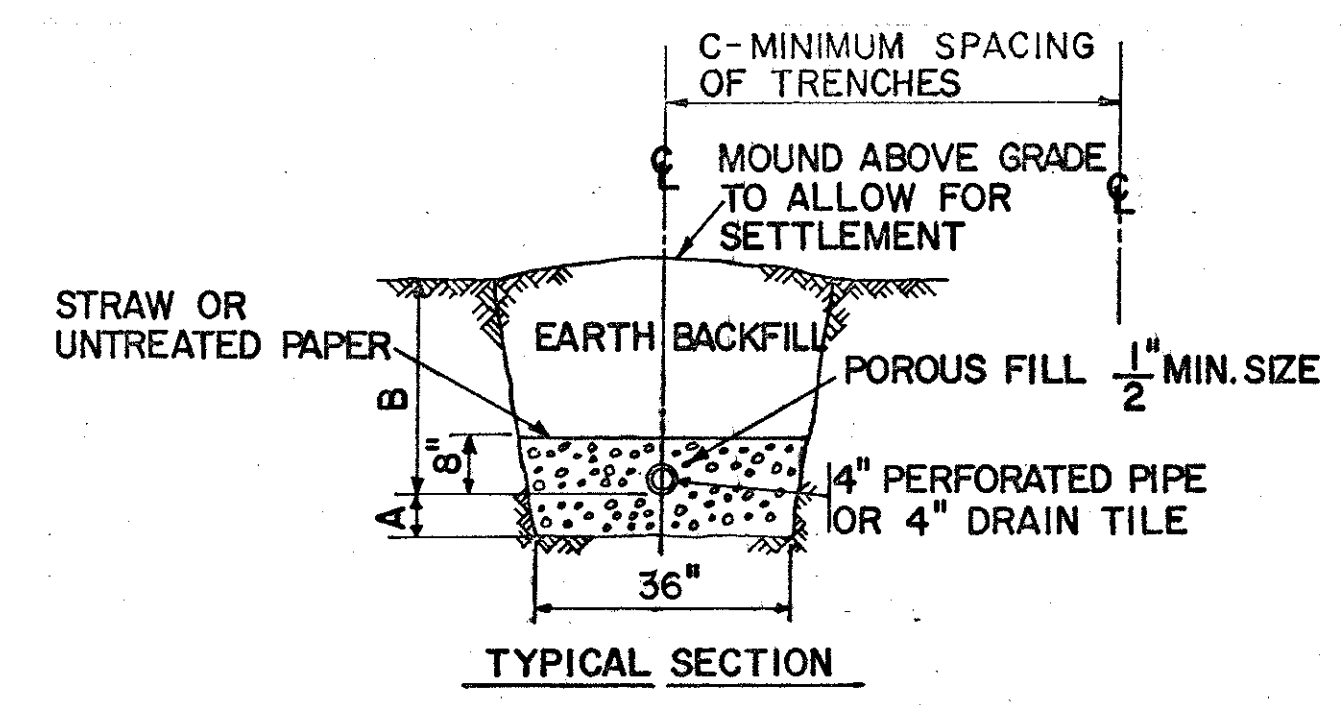
CONNECT NEW PAVEMENT TO FINISH PAVEMENT GRADE ESTABLISHED BY GOVERNMENT UNDER SEPARATE CONTRACT. THIS FINISH PAVEMENT IS TO BE FLUSH WITH EXISTING GRADE.



TYPE	CAP. GAL.	L.	W.	D.
A	1000	8'-0"	4'-0"	4'-0"
B	2200	10'-6"	6'-0"	4'-6"

STANDARD SEPTIC TANKS
TYPES "A" & "B"
NO SCALE

SEE SHEET # 2 FOR LEGEND.



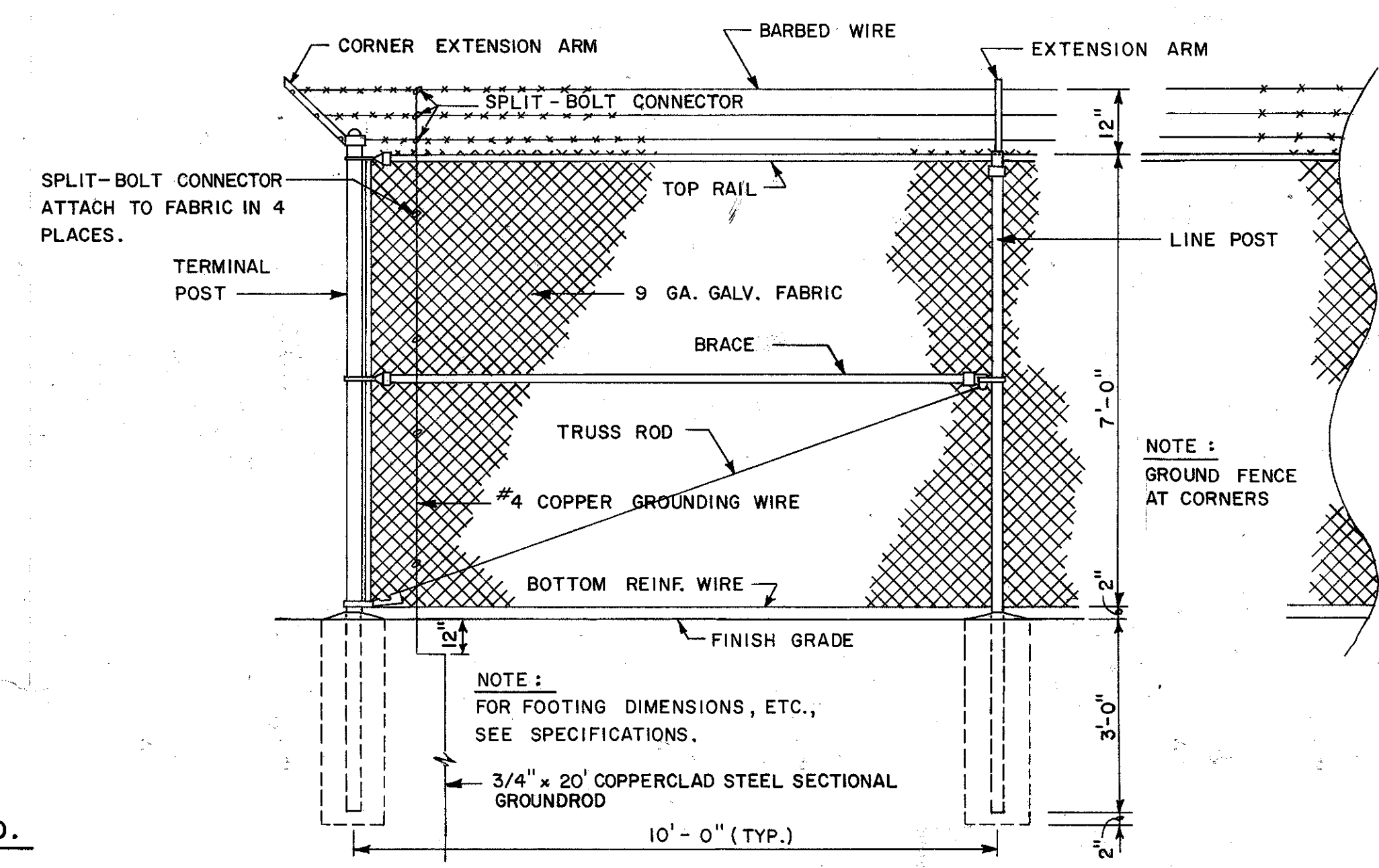
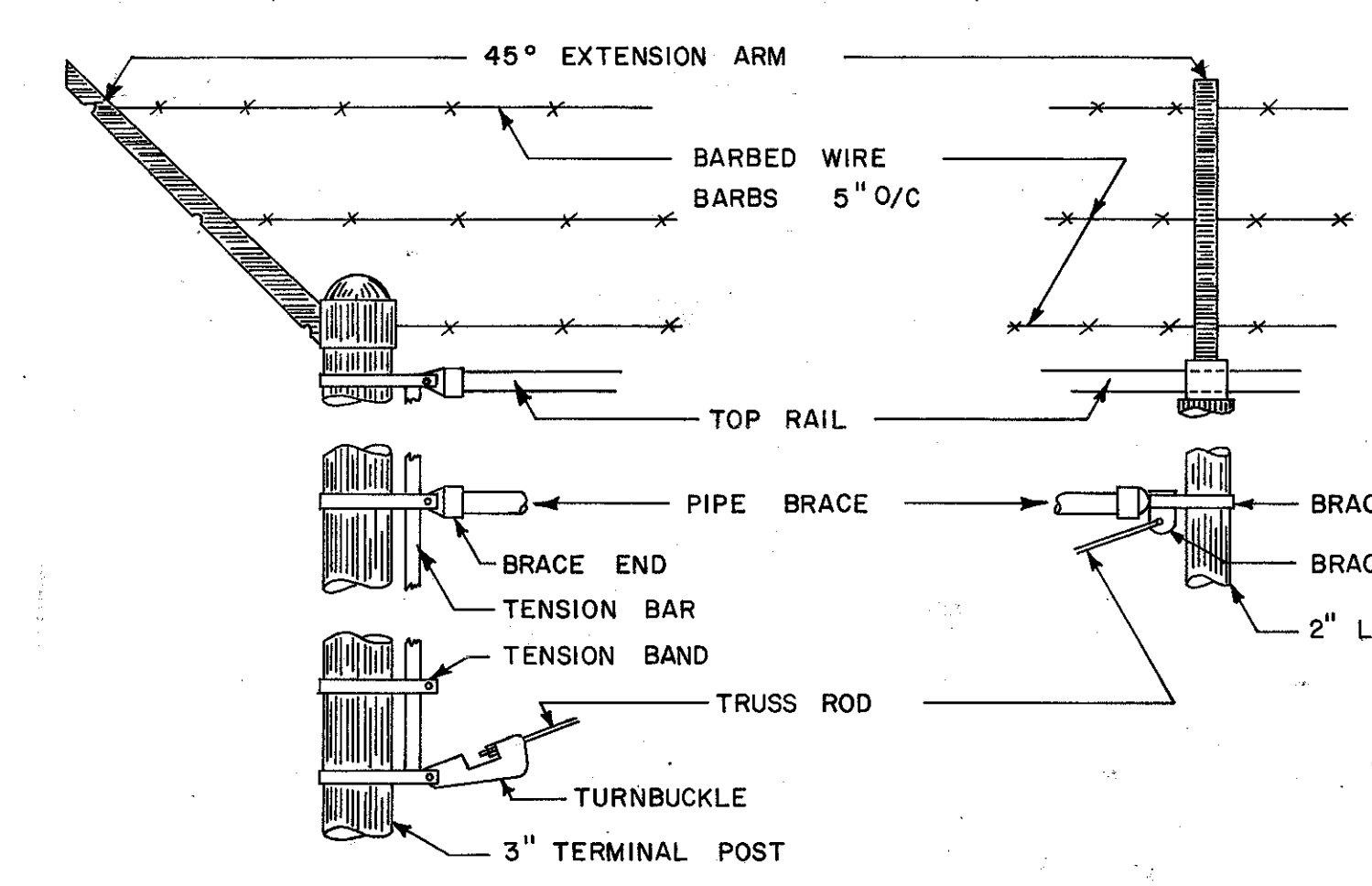
- NOTES:
1. PROVIDE DITCHES AS NECESSARY TO DIVERT SURFACE RUNOFF FROM ENTERING ABSORPTION FIELD.
 2. DESIGN STANDARD TRENCH ACCORDING TO PERCOLATION RATE AND LOCAL CODE REQUIREMENTS. SINCE THE LARGEST POSSIBLE "A" DIMENSION IS PREFERRED, SELECT TYPE TO BE USED AND % REDUCTION IN LENGTH OF STANDARD TRENCH (TYPE 1) ALLOWED FROM TABLE BELOW.

TYPE	A*	B	C	%REDUCTION**
STANDARD	6"	36" MIN.	6.0'	0
2	12"	"	"	20
3	18"	"	"	34
4	24"	"	"	43
5	30"	"	"	50
6	36"	"	"	56
7	42"	"	"	60

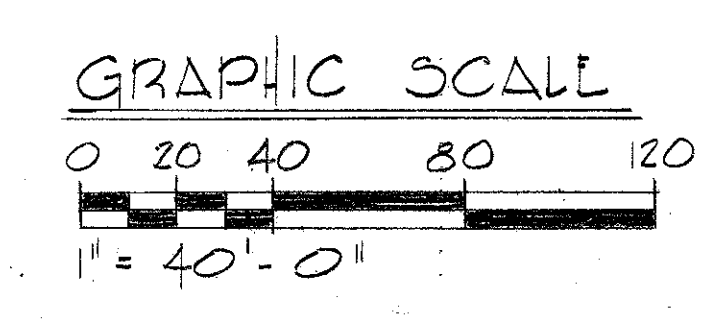
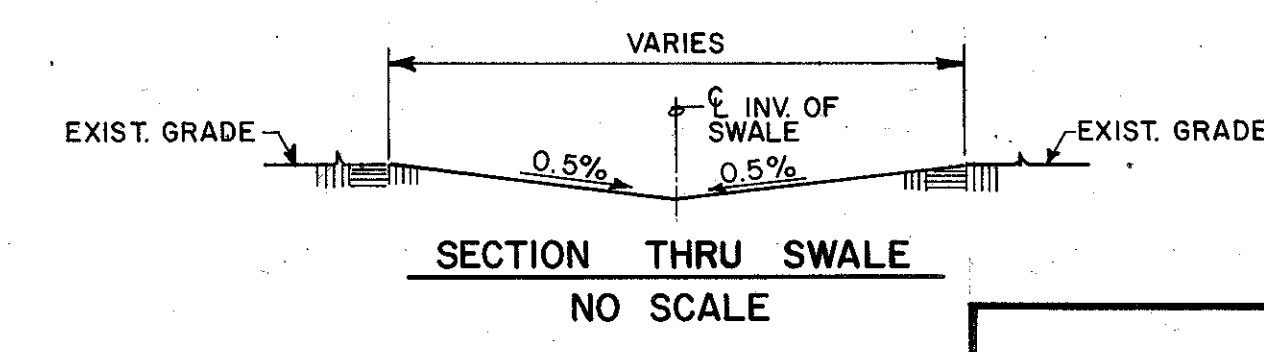
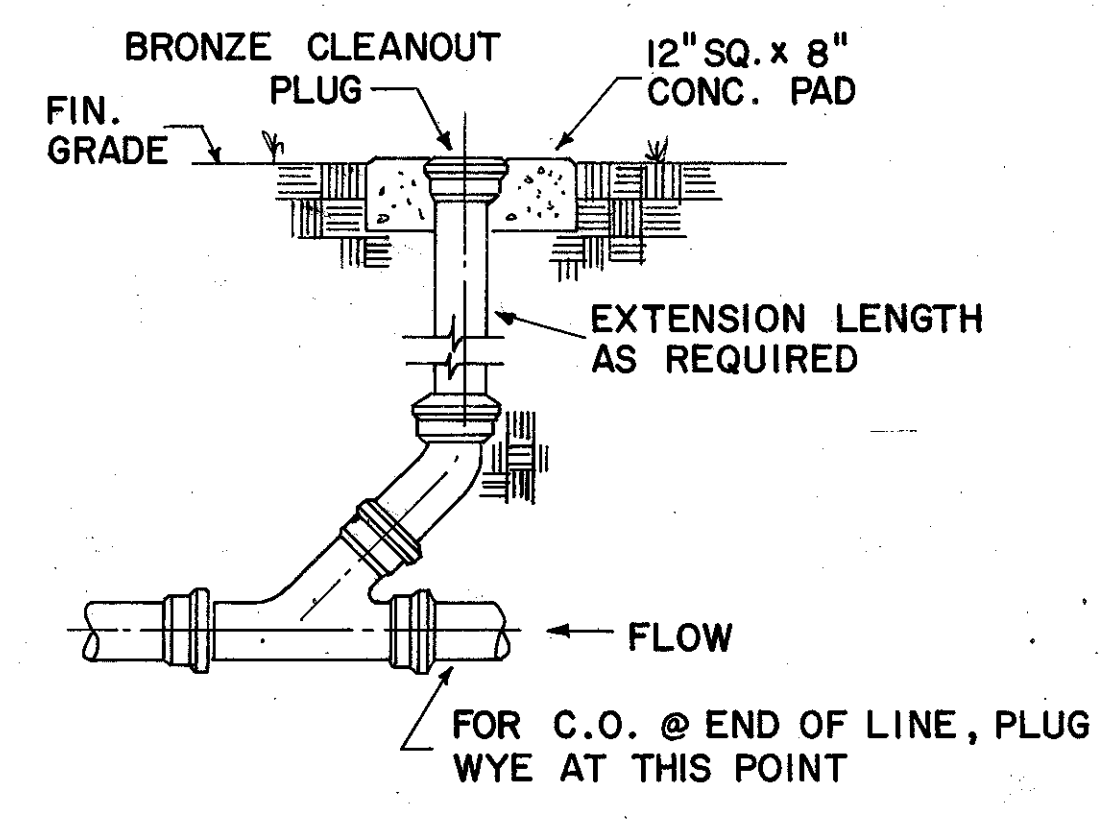
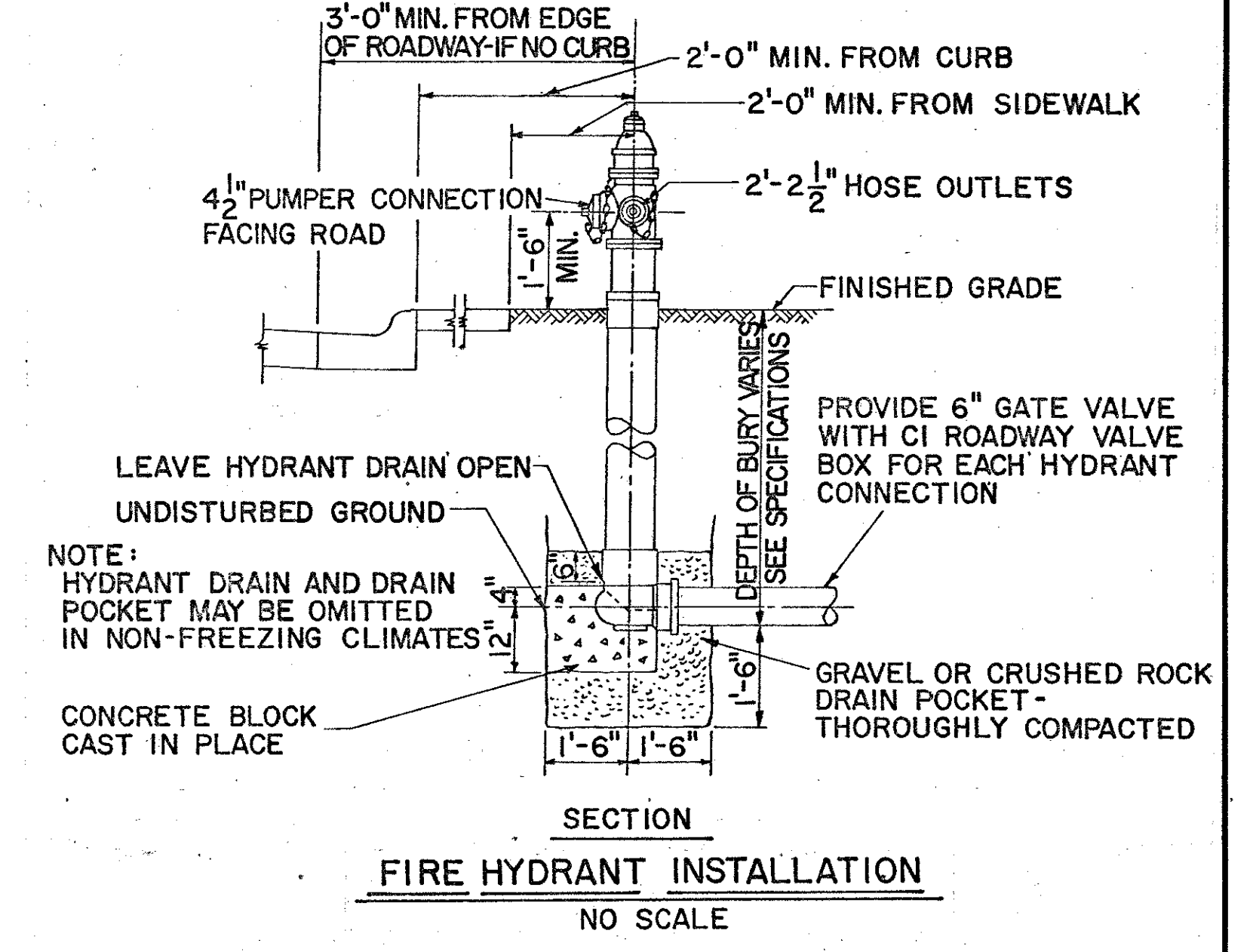
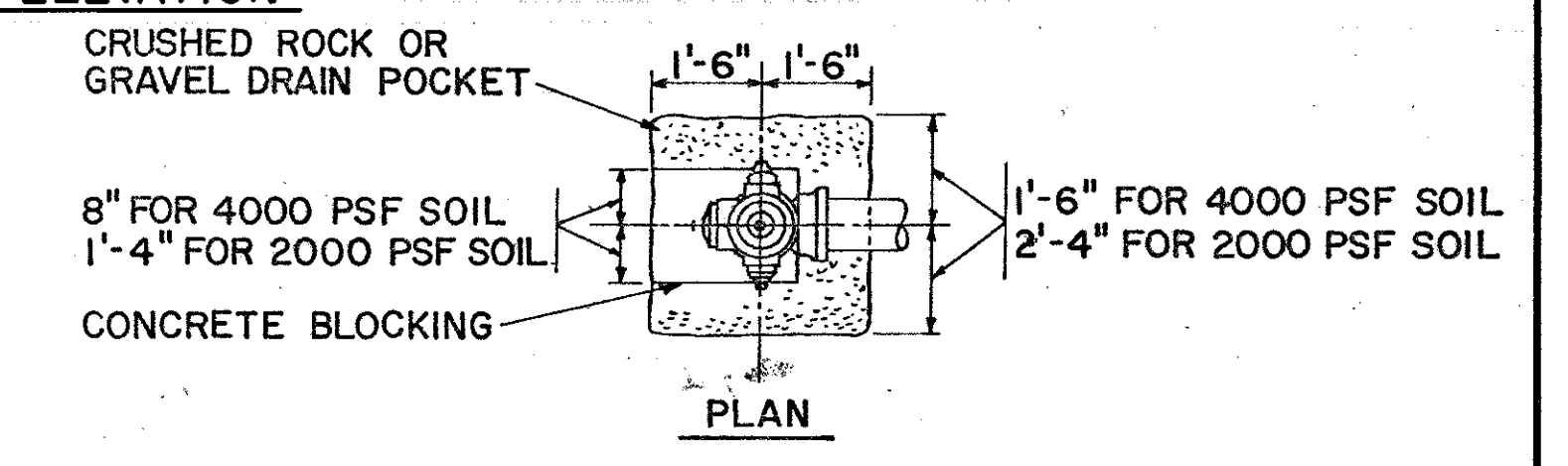
* THE LARGEST POSSIBLE "A" DIMENSION-DEPTH OF GRAVEL BELOW PIPE-IS PREFERRED. SELECTION SHOULD BE BASED ON SOIL CONDITIONS, DEPTH OF WATER TABLE, ETC.

** PERCENT REDUCTION IN LENGTH OF STANDARD TRENCH (TYPE 1) ALLOWED.

SEWAGE ABSORPTION TRENCH
NO SCALE



PART FENCE & GATE ELEVATION
NO SCALE

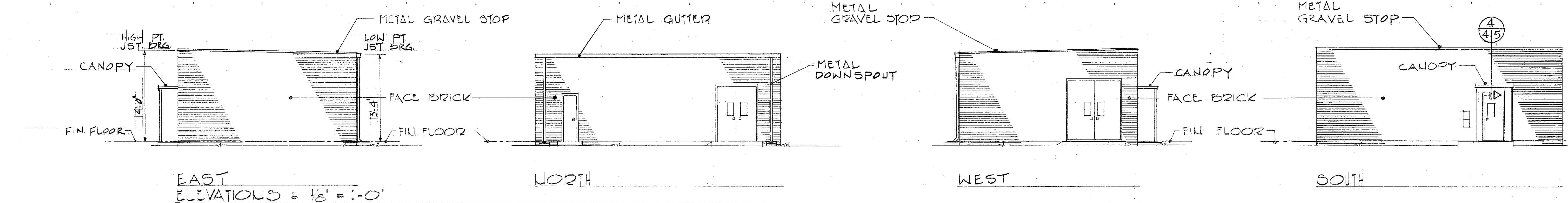


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McNAIR, GORDON JOHNSON & KARASIEWICZ ARCHITECTS-ENGINEERS-PLANNERS P.O. BOX 64 COLUMBIA, S.C. 29202		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
DSGN SIMS DR POTTER CHK SIMS	SHAW AIR FORCE BASE	SOUTH CAROLINA	
SUPV JOHNSON, CH ENGR	1619 HYDRAZINE FAC. & BLDG 1816		
SUBMITTED BY 9/19/82	SITE PLAN & DETAILS		
FIRM MEMBER (TITLE)			
SOUTHERN DIV - DESIGN DIVISION			
PDC 2/1/82 DIR			
APPROVED DATE	SIZE	CODE IDENT NO.	NAVFAC DRAWING NO.
OFFICER IN CHARGE	F	80091	5071256
APPROVED DATE	CONSTR CONTR NO. N62467-80-C-0026		
EPD FOR COMMANDER, NAVFAC	SCALE AS NOTED SPEC 26-80-0026 SHEET 3 OF 25		

REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED



MATERIALS LEGEND:

4" FACE BRICK, 2" REINFORCED CONCRETE CAVITY & 8" CMU W/ CELLS FILLED WITH LOOSE INSULATION.

8" REINFORCED CMU EXTENDING TO UPSIDE DECK UNLESS OTHERWISE NOTED.

F HOSE BIBS

INTERIOR FINISH SCHEDULE									
SPACE NO.	SPACE	FLOOR	BASE	WALLS	CEILING	REMARKS			
107	STORAGE	CH	-	CMU	EXP.				
101	ADMIN. AREA	VAT	PCM	CMU	ACP-1	9'-0"			
102	LATRINE	CT	PCM	CMU	ACP-2	9'-0"	* 3'-4" PCM VAINSCOT		
103	LOCKER	CT	PCM	CMU	ACP-2	9'-0"			
104	SHOWER	CT	PCM	CMU	ACP-2	9'-0"			
105	SERVICE AREA	CH	PCM	CMU	EXP.				
106	H-70 BULK STOR.	CH	PCM	CMU	EXP.				

COLOR SCHEDULE & LEGEND

SCHEDULED COLORS

(COLOR LOCATIONS INDICATED ON FINISH SCHEDULE BENEATH FINISH MATERIAL.)

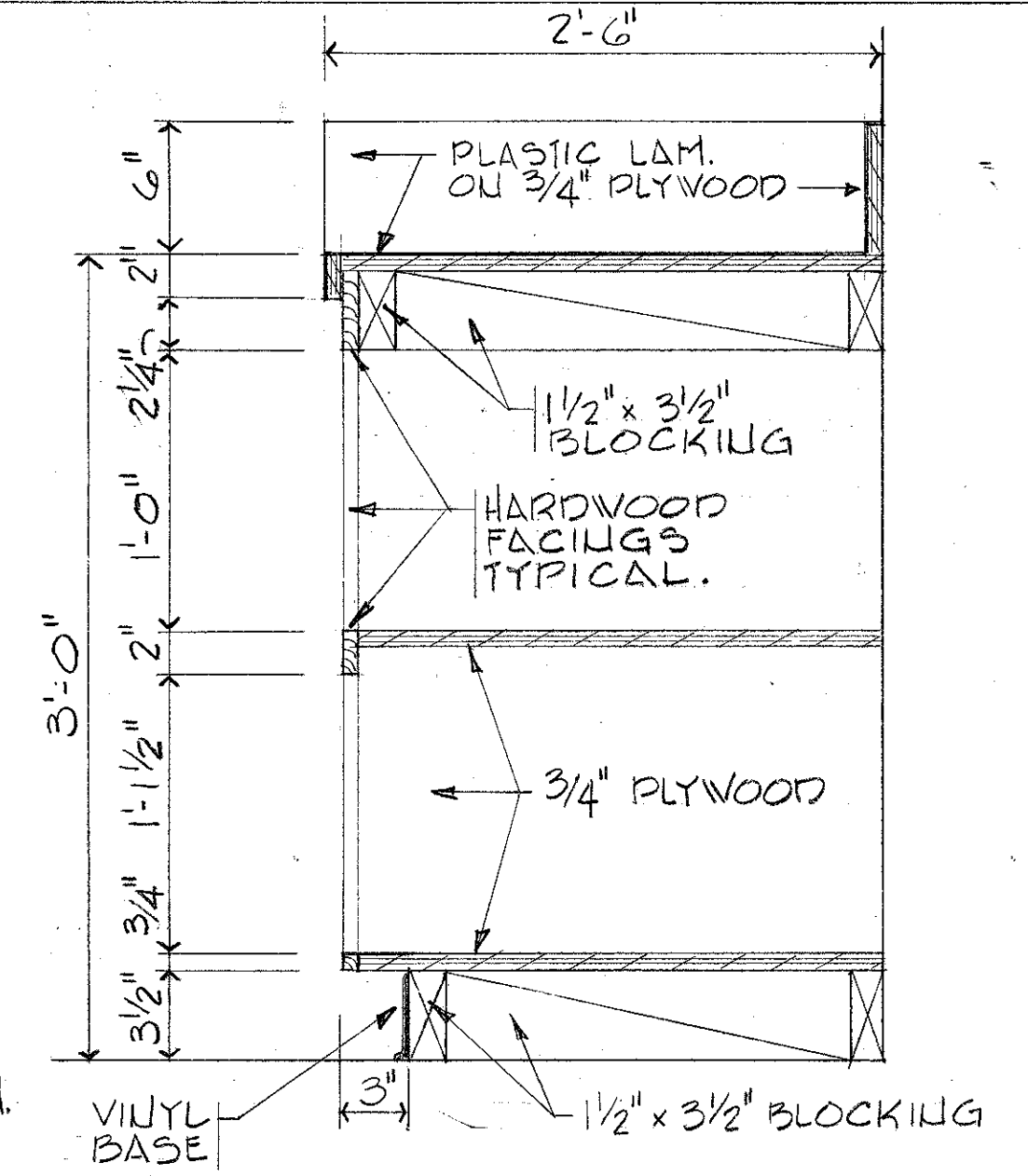
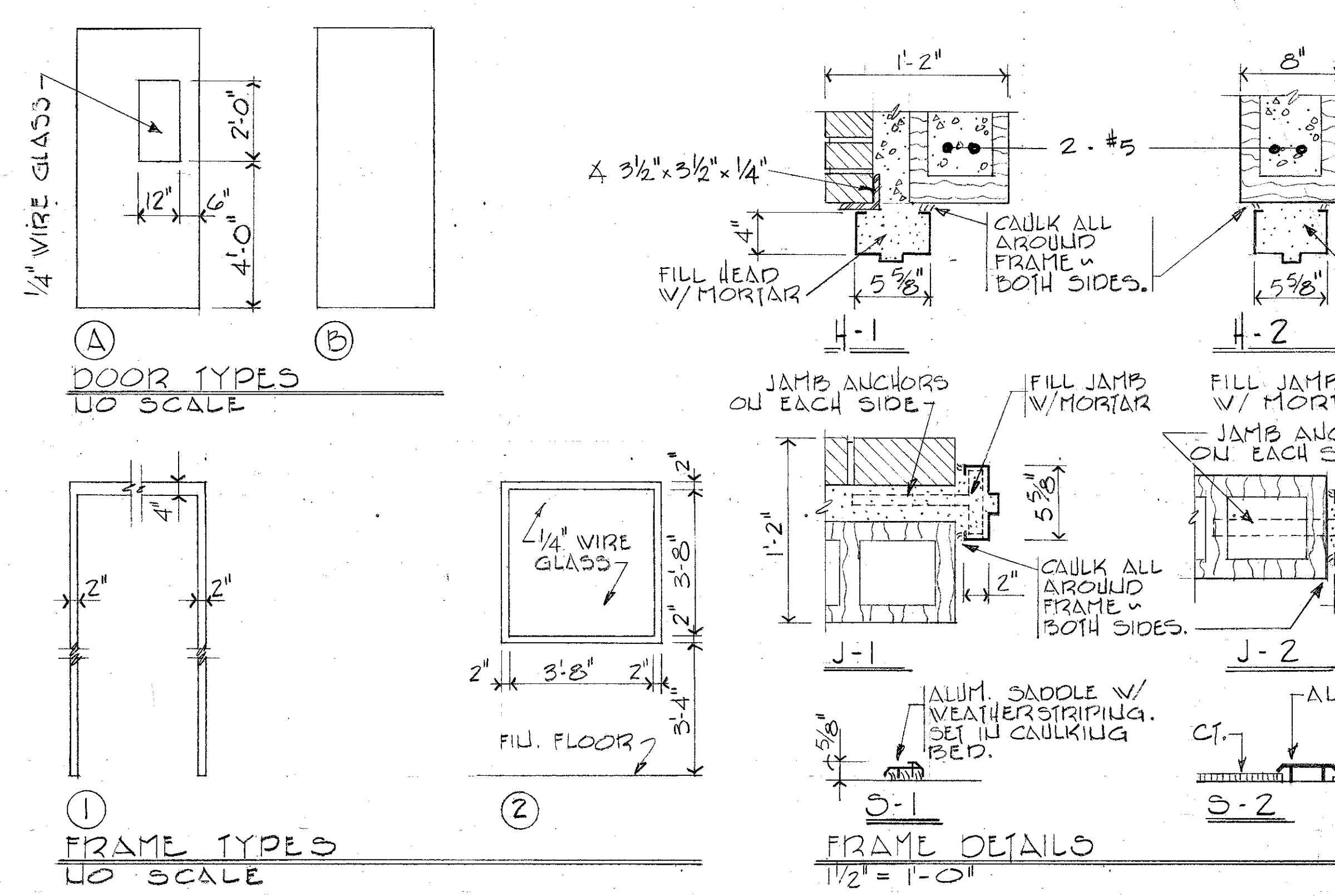
1. SHERWIN WILLIAMS	BM 11-9
2. SHERWIN WILLIAMS	BM 30-25
3. SHERWIN WILLIAMS	BM 8-18
4. SPECTRA-GLAZE	DEEP MUSHROOM BROWN
5. SPECTRA-GLAZE	DEEP KINGSTON BLUE
6. ARMSTRONG	51838
7. AMERICAN OLEAN	BONE
8. ROPPE RUBBER	BROWN 10

UNCHEDULED COLORS

9. TOILET PARTITIONS AND PLASTIC LAMINATE	WILSON ART 1572
10. DOORS, FRAMES AND EXTERIOR TRIM	SHERWIN WILLIAMS BM 39-8
11. DEEP RIB EXTERIOR METAL WALL PANELS	SHERWIN WILLIAMS BM 12-26

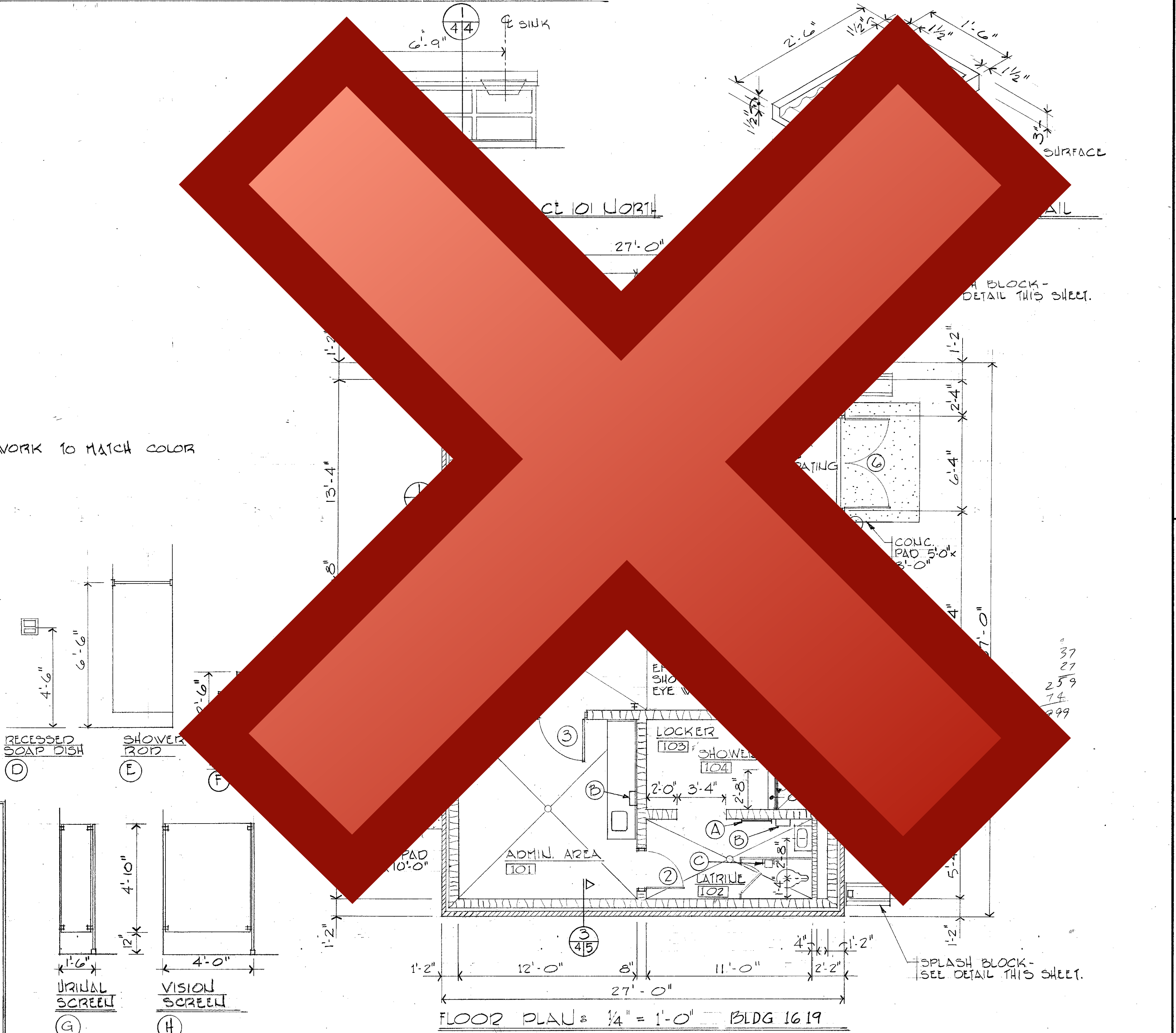
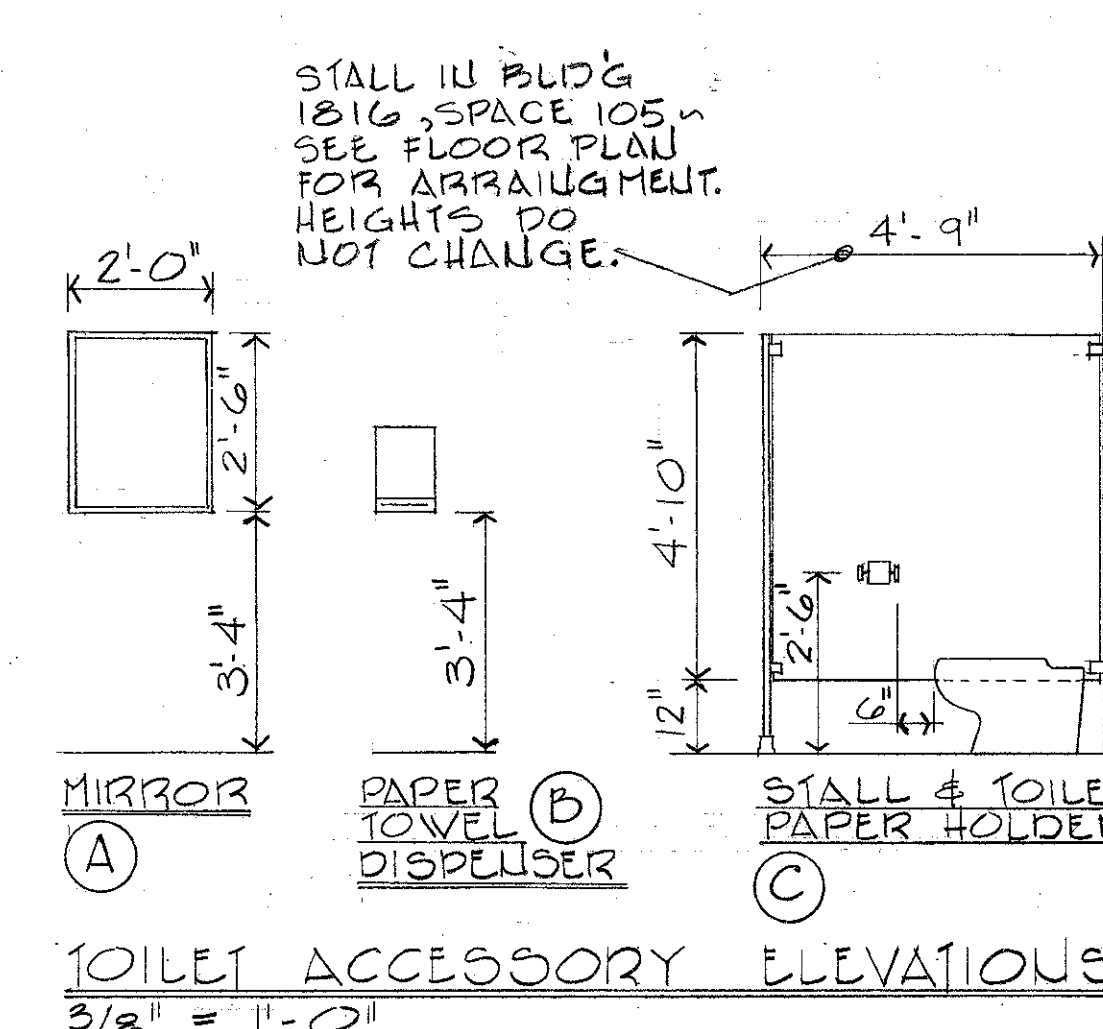
NOTE:
MANUFACTURERS TRADE NAMES ARE USED TO REFER TO COLOR AND FINISH ONLY. OTHER BRANDS OF SIMILAR CHARACTERISTICS ARE ACCEPTABLE.

DOOR & WINDOW SCHEDULE									
DOOR NO.	DOOR	FRAME	DETAIL	HEAD	JAMB	SILL	MAT'L.	LABEL	REMARKS
1	A	3'-0" x 7'-0"	1-1	H-1	J-1	S-1	HM.	1	
2	B	2'-6" x 7'-0"	1-2	H-2	J-2	S-2	HM.	2	
3	A	3'-0" x 7'-0"	1-1	H-1	J-1	S-1	HM.	3	
4	B	2'-6" x 7'-0"	1-2	H-2	J-2	S-2	HM.	4	
5	A	PR. 4'-0" x 9'-4"	1-1	H-1	J-1	S-1	HM.	5	
6	A	PR. 3'-0" x 8'-4"	1-1	H-1	J-1	S-1	HM.	6	
7	-	4'-0" x 4'-0"	-	-	-	-	-	-	WINDOW
8	B	2'-0" x 7'-0"	1-1	H-1	J-1	S-1	HM.	8	



SECTION 1/2" = 1'-0"

NOTE: PRIME & PAINT CABINET WORK TO MATCH COLOR OF ADJOINING WALLS.



GRAPHIC SCALES:

0 4' 8' 12' 16' 20' 24'

1/8" = 1'-0"

0 4' 8' 12'

1/4" = 1'-0"

0 2' 4' 6'

3/8" = 1'-0"

0 1' 2' 3'

1" = 1'-0"

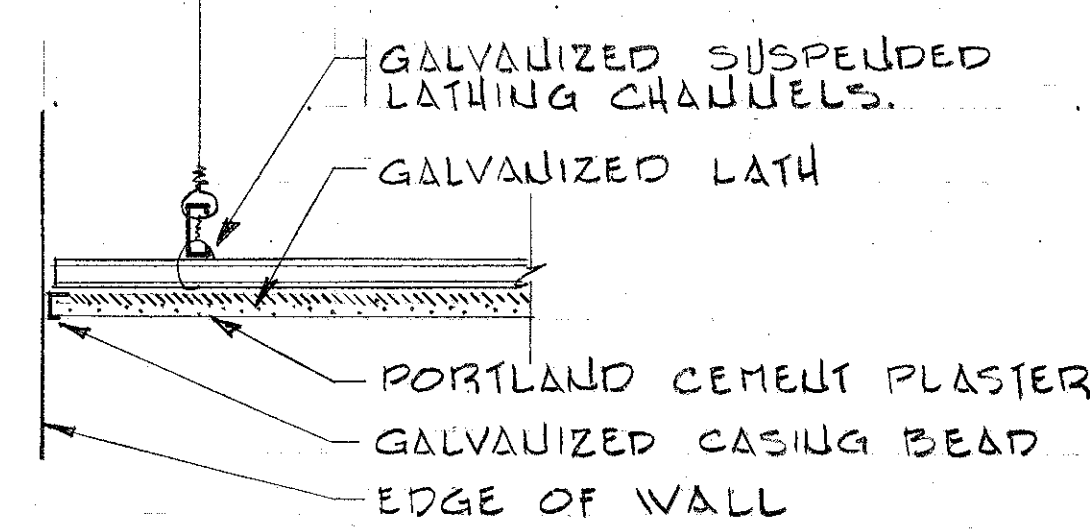
0 1' 2'

1 1/2" = 1'-0"

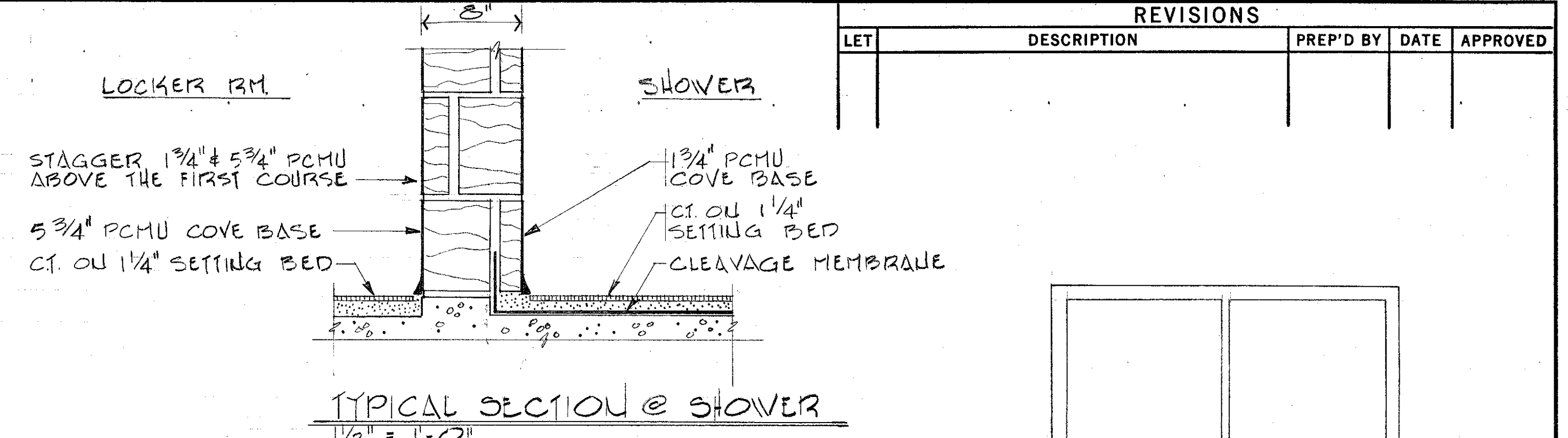
AS-BUILT

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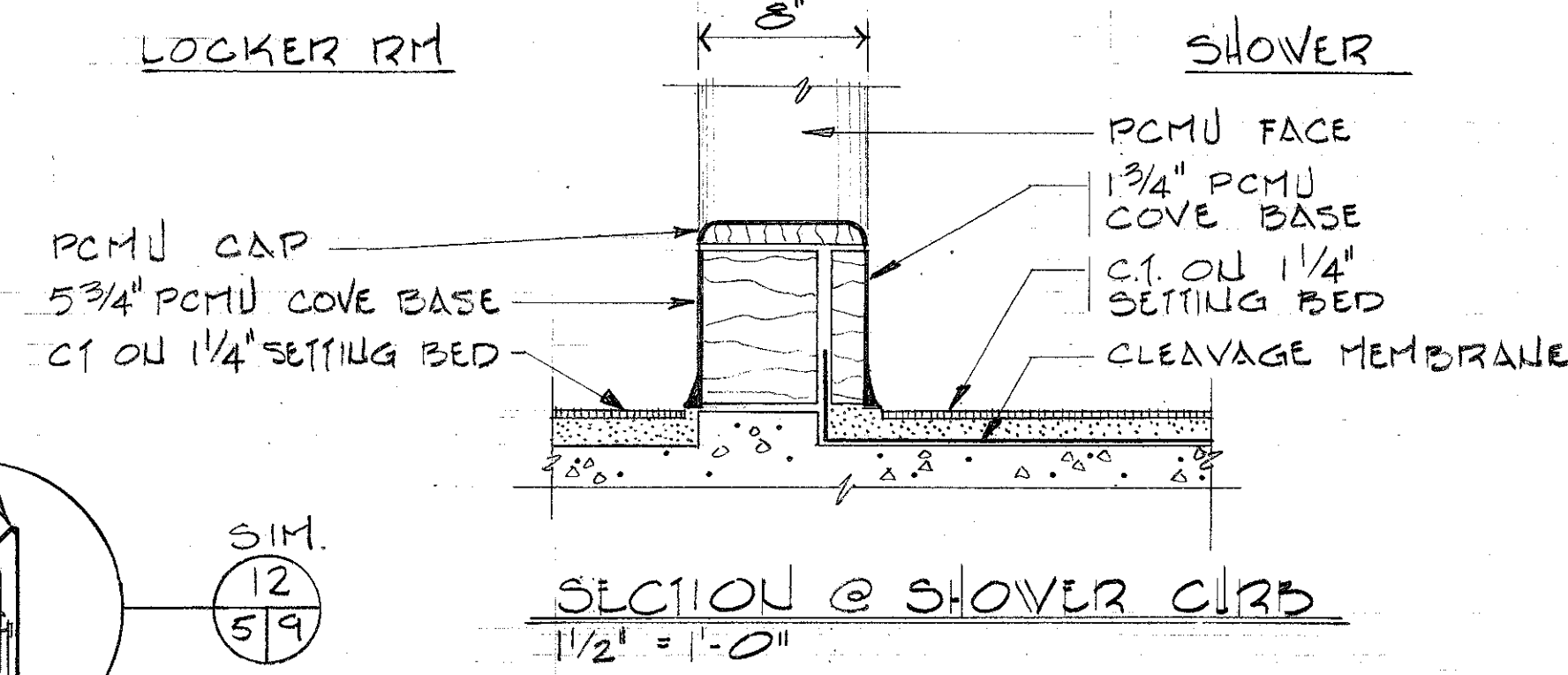
McNair, Gordon, Johnson & Karasiewicz ARCHITECTS - ENGINEERS - PLANNERS P.O. BOX 84 COLUMBIA, S.C. 29202	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.
DESIGN: PEAKS, PEAKS, CHAK, JOHNSON SUPV: JOHNSON, CH ENGR DATE: 1/10/82 FIRM NUMBER (TITLE): SOUTHERN DIV - DESIGN DIVISION PROJECT: 1619 HYDRAZINE FAC. & BLDG 1816 FLOOR PLAN, ELEVATIONS, SCHEDULES & DETAILS	SHAW AIR FORCE BASE SOUTH CAROLINA 1619 HYDRAZINE FAC. & BLDG 1816 FLOOR PLAN, ELEVATIONS, SCHEDULES & DETAILS
APPROVED: [Signature] OFFICER IN CHARGE DATE: 1/12/82	SIZE: 11x17 CODE IDENT NO.: 80091 NAVJAG DRAWING NO.: 5071257 CONSTR CONTR NO.: UG2467-80-C-0024
ED FOR COMMANDER, NAVFAC	SCALE: AS NOTED SPEC: 06-80-0026 SHEET 4 OF 25



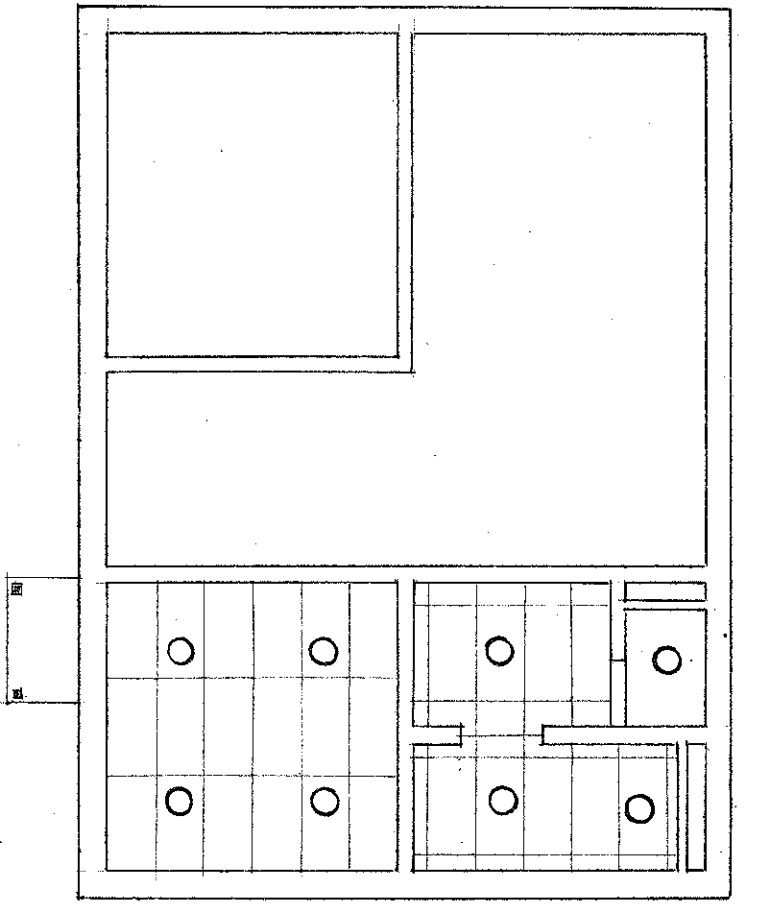
TYPICAL PLASTER DETAIL
1/2" = 1'-0"



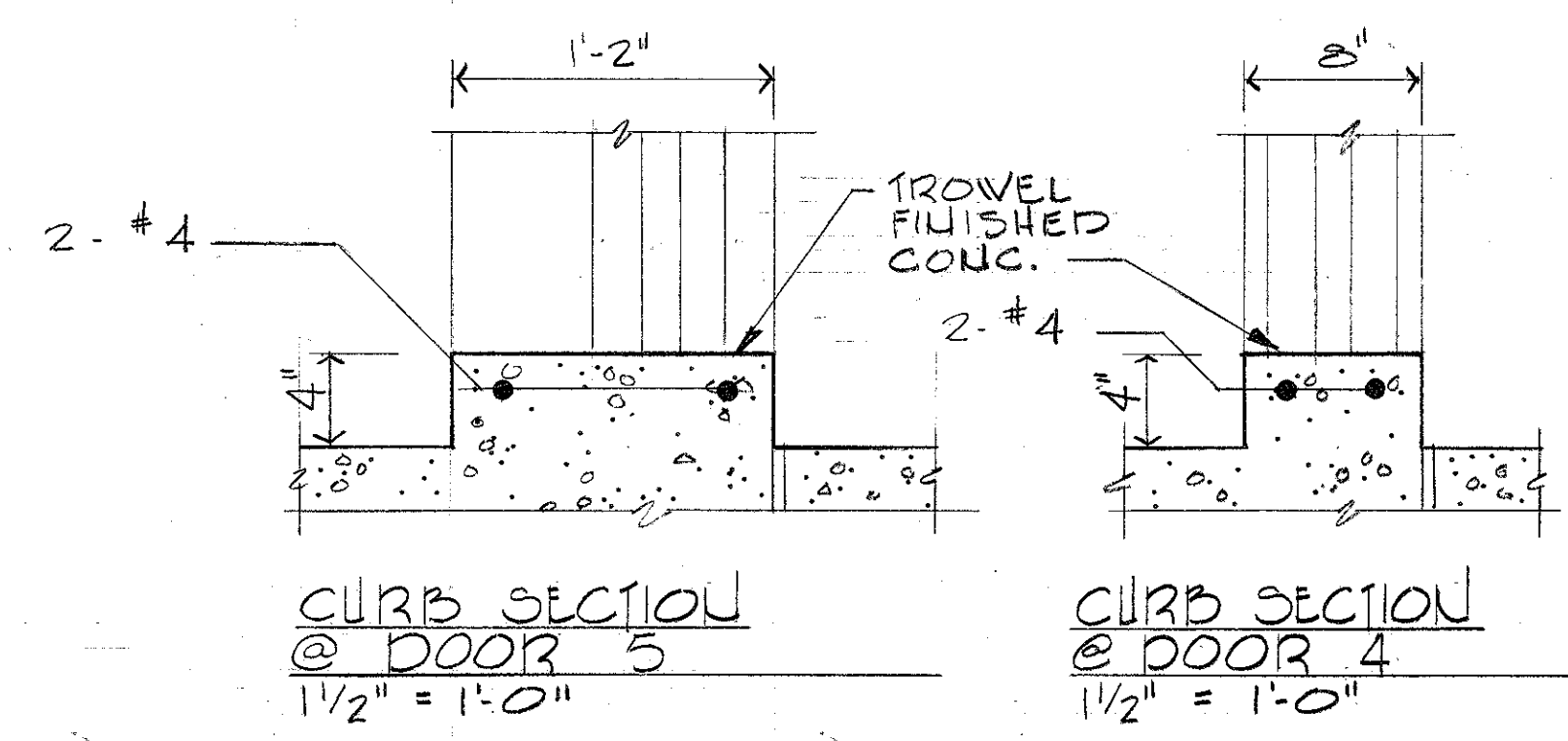
TYPICAL SECTION @ SHOWER
1/2" = 1'-0"



SECTION @ SHOWER CURB
1/2" = 1'-0"

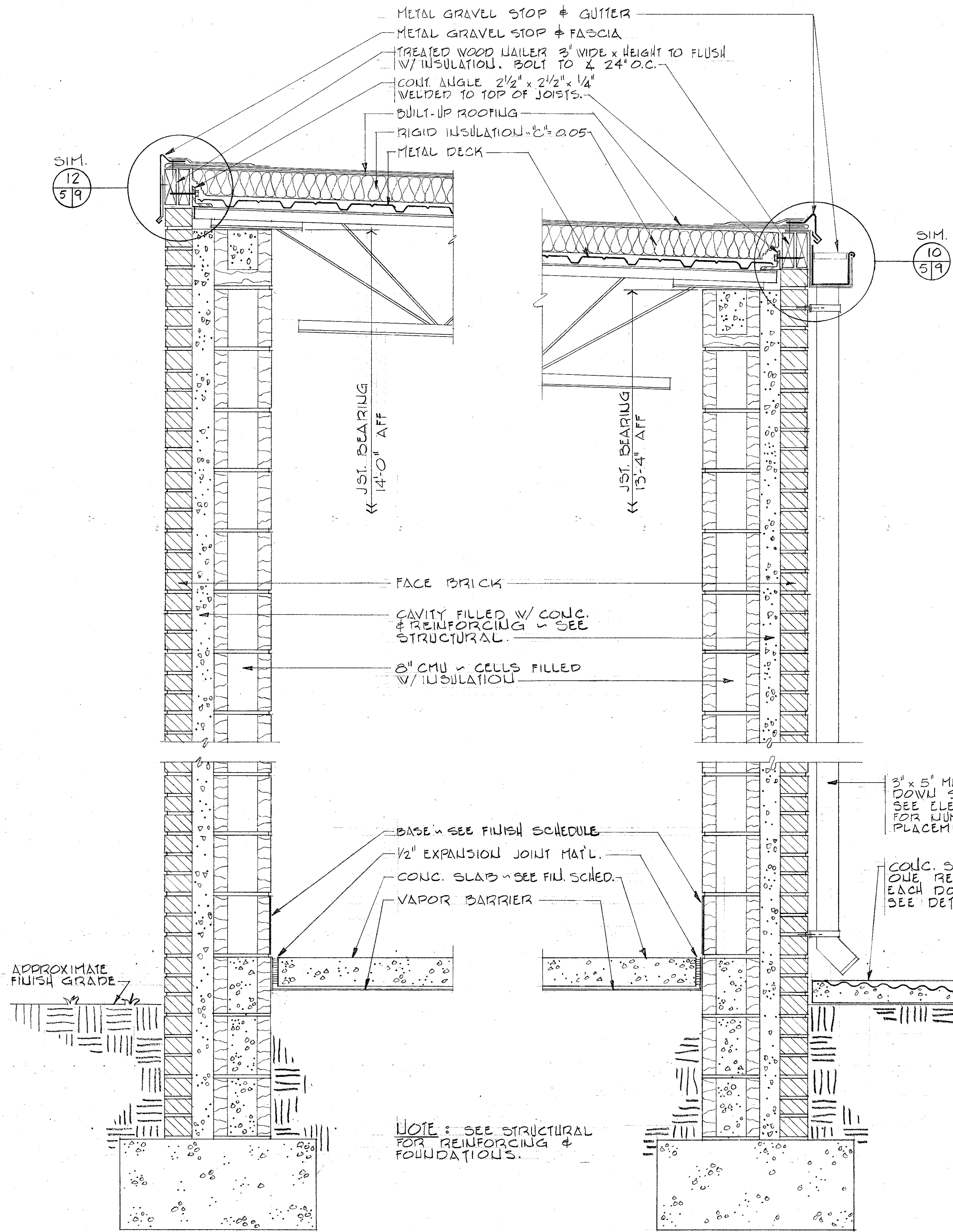


REFLECTED CEILING PLAN
1/8" = 1'-0"



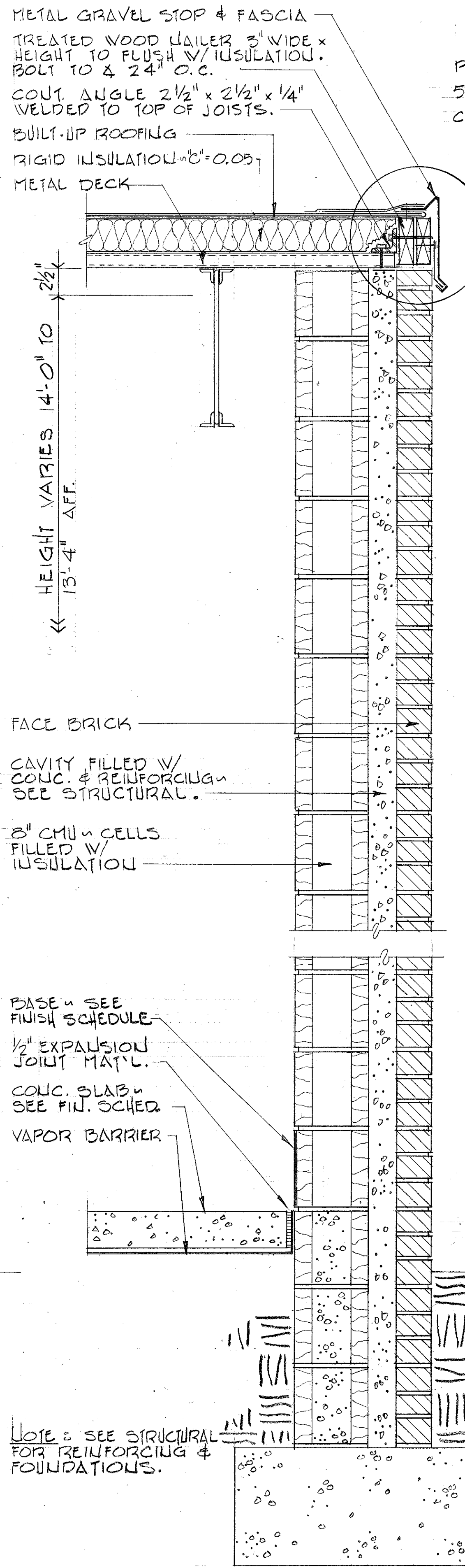
CURB SECTION @ DOOR 5
1/2" = 1'-0"

CURB SECTION @ DOOR 4
1/2" = 1'-0"

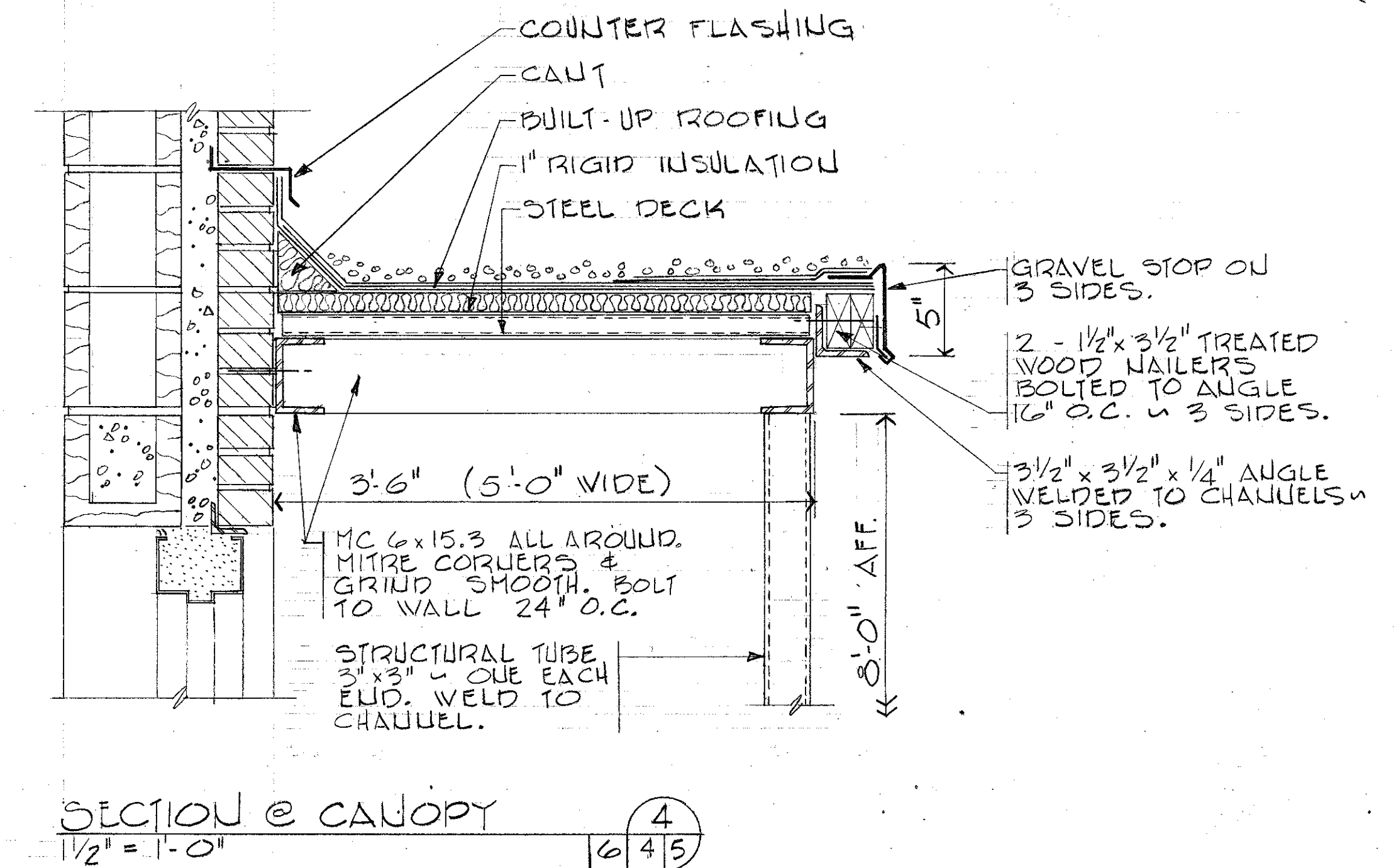


SECTION 1
1/2" = 1'-0"

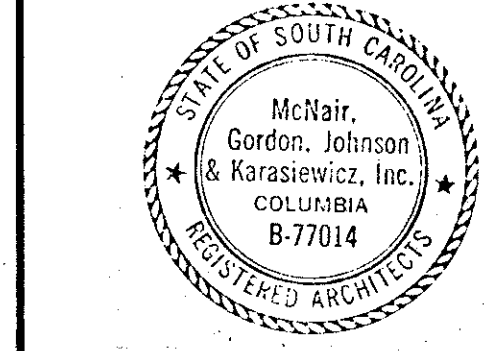
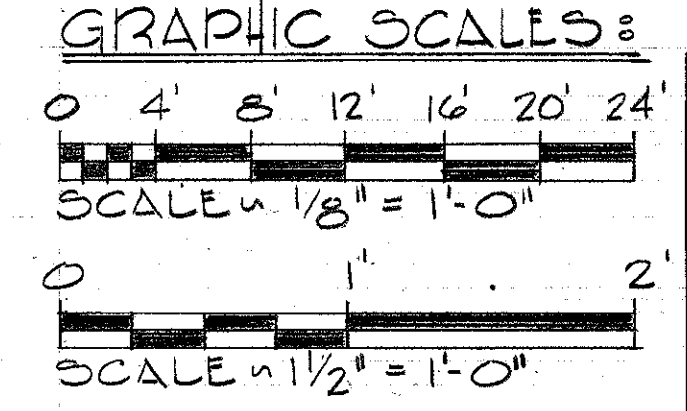
SECTION 2
1/2" = 1'-0"



SECTION 3
1/2" = 1'-0"



SECTION @ CANOPY
1/2" = 1'-0"



AS-BUILT

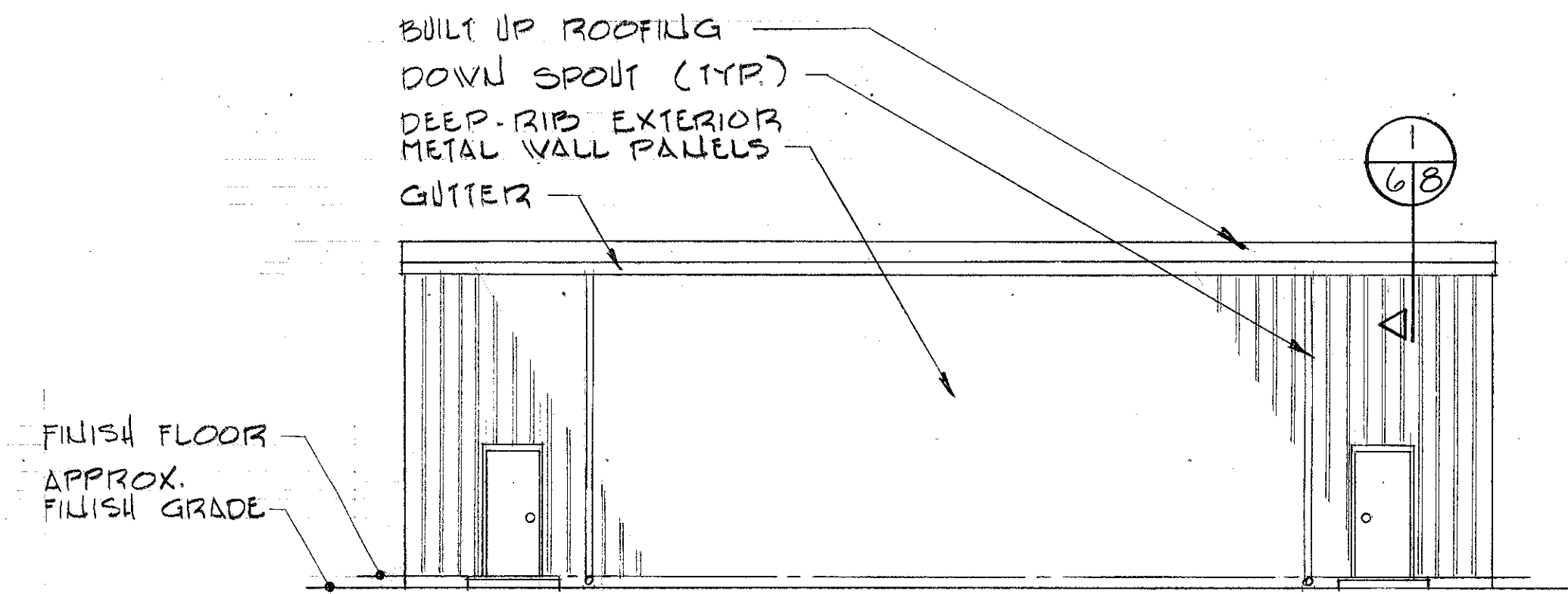
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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE FAC. & BLDG 1816 REFLECTED CEILING PLAN, SECTIONS & DETAILS	
DSGN PLANE DR PLAKE CHR JOHNSON SUPV JONATHAN ENGR SURVYED BY DATE SOUTHERN DIV - DESIGN DIVISION PDE APPROVED OFFICER IN CHARGE DATE ETD FOR COMMANDER, NAVFAC	SIZE CODE IDENT NO. NAVFAC DRAWING NO. 5071258 80091 CONSTR CONTR NO. 112467-80-C-0026 SCALE AS NOTED SPEC 06-80-0026 SHEET 5 OF 25

MATERIAL LEGEND [PLAN] :

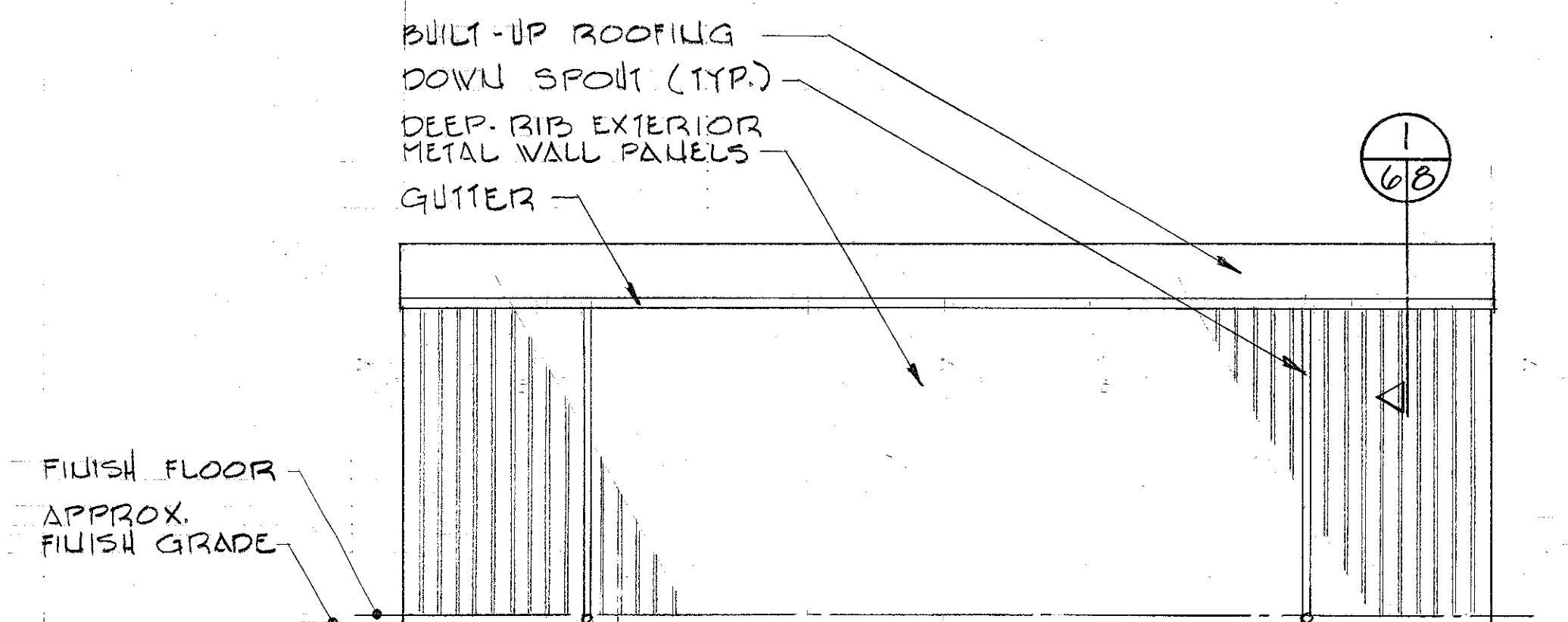
- DEEP RIB EXTERIOR METAL WALL PANELS & BATT INSULATION ON CHANNELS WITH 2" HIGH INTERIOR METAL WALL PANELS
- 8" CMU W/ EXTERIOR FACE OF AGGREGATE SET IN EPOXY
- CMU WALL
- 12" REINFORCED CONCRETE WALL

NOTE: SEE REFLECTED CEILING PLAN FOR LOCATION OF FIRE WALLS.

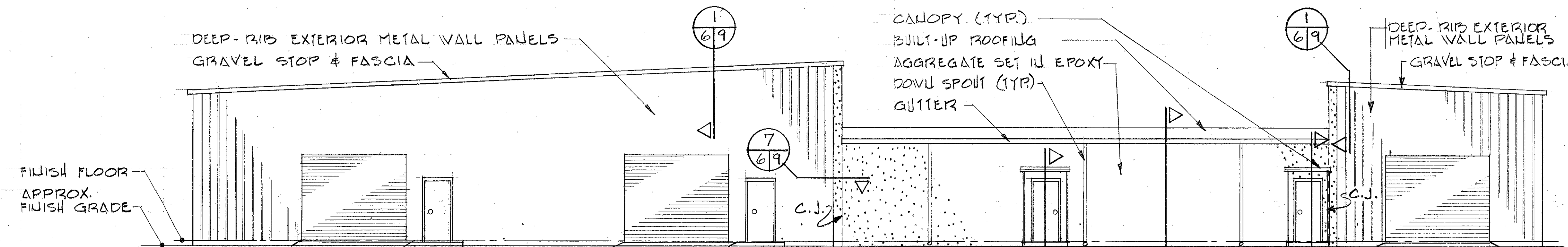
REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED



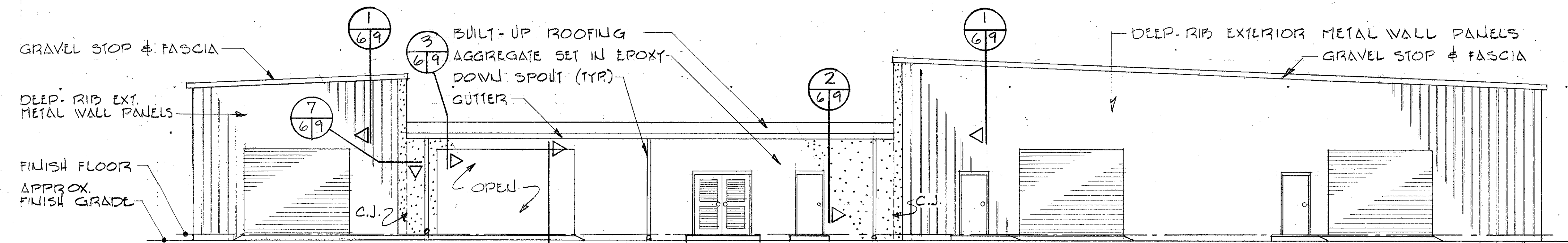
SOUTH ELEVATION
1/8" = 1'-0"



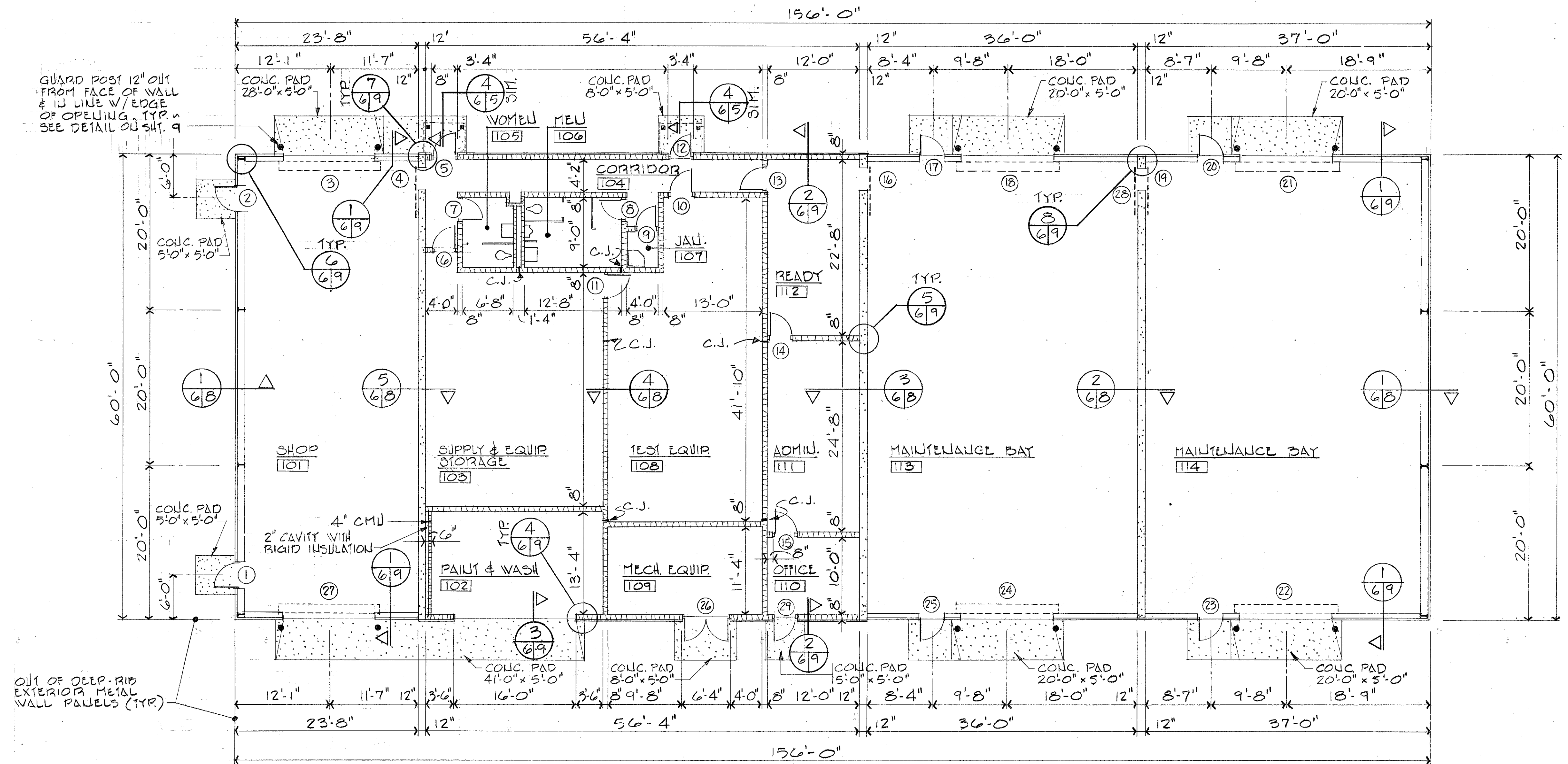
NORTH ELEVATION
1/8" = 1'-0"



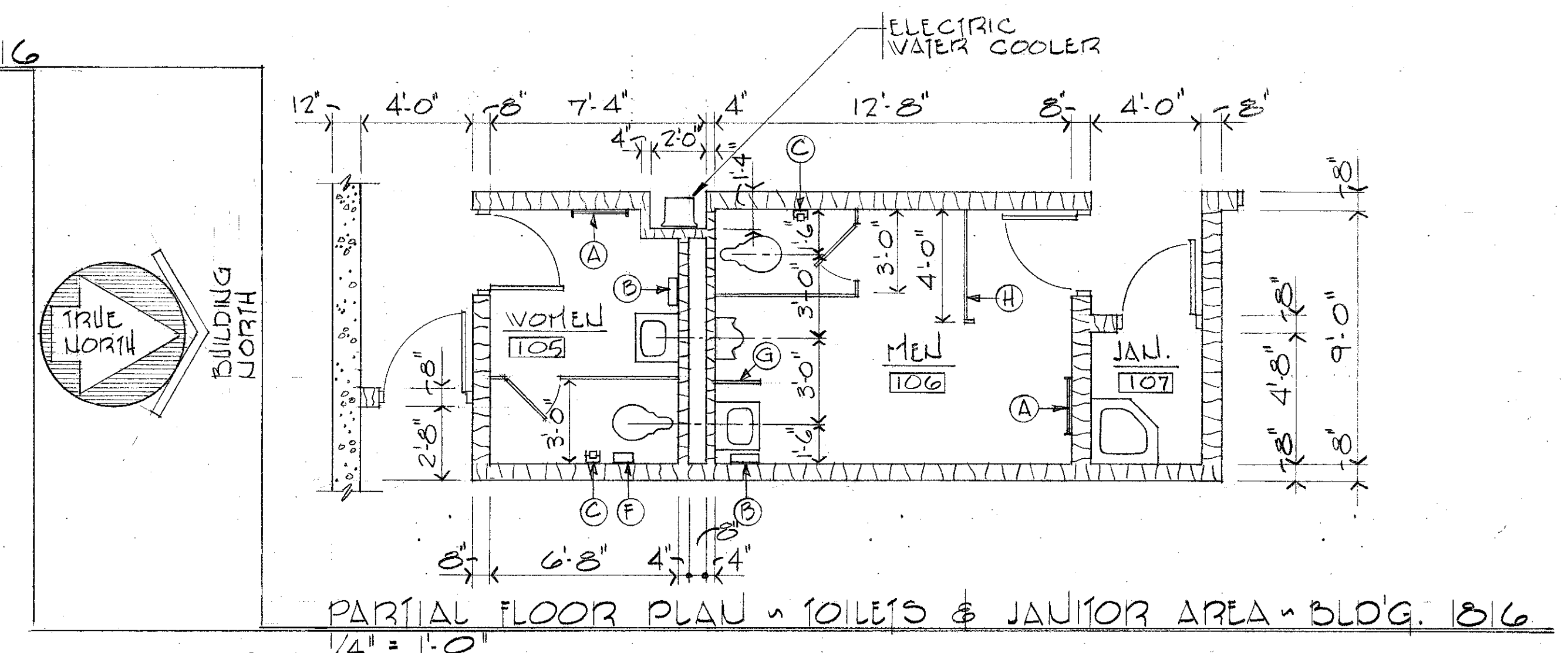
WEST ELEVATION
1/8" = 1'-0"



EAST ELEVATION
1/8" = 1'-0"



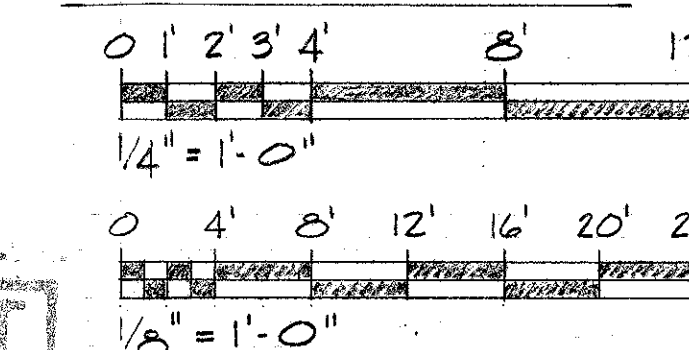
FLOOR PLAN - MISSILE ASSEMBLY BLDG. 1816
1/8" = 1'-0"



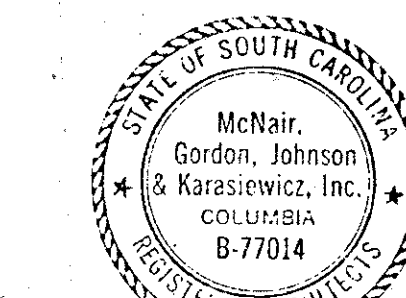
PARTIAL FLOOR PLAN - TOILETS & JANITOR AREA - BLDG. 1816
1/4" = 1'-0"

NOTE:
SEE SHEET 4 FOR TOILET ACCESSORIES.

GRAPHIC SCALES:



AS-BUILT



ARCH. & ENGR. SEAL

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DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE FAC. & BLDG 1816 FLOOR PLANS & ELEVATIONS	
DESGN PLANNING/PLANNING CHK JOHNSON SUPV. JOHNSON, CH ENGR SUBMITTED BY DATE 9/19/84 SOUTHERN DIV - DESIGN DIVISION PDB: [Signature] APPROVED DATE 11/17/86 OFFICER IN CHARGE APPROVED DATE 11/17/86 EFD FOR COMMANDER, NAVFAC	SIZE CODE IDENT NO. NAVFAC DRAWING NO. F 80091 5071259 CONSTR CONTR NO. 1462467-80-C-0024 SCALE AS NOTED SPEC 06-80-0024 SHEET 6 OF 25

FINISH SCHEDULE - BLDG 1816

SPACE	NO.	FLOOR	BASE	WALLS	CEILING	REMARKS
SHOP	101	CH	-	COUC. MP-1	MP-1	EXP.
PAINT & WASH	102	CH	-	CMU	CMU	EXP.
SUPPLY & EQUIP STOR	103	VAT	VB	CMU	GVB	COUC. CHU
CORRIDOR	104	VAT	VB	CMU	CMU	COUC. GVB
WOMEN	105	CT	PCM	CMU*	CMU	CMU
MEN	106	CT	PCM	CMU*	CMU	CMU
JAUNTOR	107	CT	PCM	CMU*	CMU*	CMU*
TEST EQUIP	108	VAT	VB	CMU	GVB	CMU
MECH EQUIP	109	CH	-	CMU	CMU	EXP.
OFFICE	110	VAT	VB	COUC.	GVB	GVB
ADMIN.	111	VAT	VB	COUC.	CMU	CMU
READY	112	VAT	VB	COUC.	CMU	GVB
MAINT. BAY	113	CH	-	COUC. MP-1	COUC. MP-1	EXP.
MAINT. BAY	114	CH	-	MP-1	MP-1	COUC. MP-1

DOOR SCHEDULE - BLDG 1816

NO.	DOOR	OPEN'G SIZE	THICK.	MAT'L	FRAME	DETAIL	MAT'L	LABEL	DOVE SET	REMARKS
1	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-3	J-3	S-2	HM	
2	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-3	J-3	S-2	HM	
3	C	12'-0" x 10'-0"	1 3/4"	HM	1	H-4	J-4	S-3	STL	
4	D	3'-0" x 7'-0"	1 3/4"	HM	3	H-5	J-5	S-4	20 MIU	BLAST DOOR
5	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-2	J-2	S-2	HM	
6	B	3'-0" x 7'-0"	1 3/4"	HM	1	H-1	J-1	-	HM	1 HR.
7	A	2'-8" x 7'-0"	1 3/4"	HM	1	H-1	J-1	S-1	HM	20 MIU
8	A	2'-8" x 7'-0"	1 3/4"	HM	1	H-1	J-1	S-1	HM	20 MIU
9	D	3'-0" x 7'-0"	1 3/4"	HM	1	H-1	J-1	-	HM	20 MIU
10	B	3'-0" x 7'-0"	1 3/4"	HM	1	H-1	J-1	-	HM	20 MIU
11	B	3'-0" x 7'-0"	1 3/4"	HM	1	H-1	J-1	-	HM	20 MIU
12	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-2	J-2	S-2	HM	1 HR.
13	B	3'-0" x 7'-0"	1 3/4"	HM	1	H-1	J-1	-	HM	20 MIU
14	B	3'-0" x 7'-0"	1 3/4"	HM	1	H-1	J-1	-	HM	20 MIU
15	B	3'-0" x 7'-0"	1 3/4"	HM	1	H-1	J-1	-	HM	20 MIU
16	D	3'-0" x 7'-0"	1 3/4"	HM	3	H-5	J-5	S-4	20 MIU	BLAST DOOR
17	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-3	J-3	S-2	HM	
18	C	12'-0" x 10'-0"	1 3/4"	HM	1	H-4	J-4	S-3	STL	
19	D	3'-0" x 7'-0"	1 3/4"	HM	3	H-5	J-5	S-4	20 MIU	BLAST DOOR
20	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-3	J-3	S-2	HM	
21	C	12'-0" x 10'-0"	1 3/4"	HM	1	H-4	J-4	S-3	STL	
22	C	12'-0" x 10'-0"	1 3/4"	HM	1	H-4	J-4	S-3	STL	
23	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-3	J-3	S-2	HM	
24	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-3	J-3	S-2	HM	
25	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-3	J-3	S-2	HM	
26	E	PR 3'-0" x 7'-0"	1 3/4"	HM	2	H-2	J-2	S-2	HM	LOUVERED
27	C	12'-0" x 10'-0"	1 3/4"	HM	1	H-4	J-4	S-3	STL	
28	D	3'-0" x 7'-0"	1 3/4"	HM	3	H-5	J-5	S-4	20 MIU	BLAST DOOR
29	A	3'-0" x 7'-0"	1 3/4"	HM	1	H-2	J-2	S-2	HM	

SCHEDULE ABBREVIATIONS:

ATC-1 2'-0" x 4'-0" LAY-IN ACOUSTICAL TILE CEILING.
 ATC-2 2'-0" x 4'-0" LAY-IN PAPER-WRAPPED GYPSUM CORE WITH BAKED-ON TEXTURED PAINT FINISH.
 CH CONCRETE WITH HARDBENER.
 CMU CONCRETE MASONRY UNIT.
 COUC. CONCRETE.
 CT CERAMIC TILE.
 EXP EXPOSED STRUCTURE.
 GVB GYPSUM WALL BOARD ON Z-SHAPED FURRING W/ RIGID INSULATION.
 HM HOLLOW METAL.
 MP-1 INTERIOR METAL PANELS W/ INSULATION BEHIND.

PCM PRE-FACED CONCRETE MASONRY UNIT.
 STL STEEL

VAT VINYL ASBESTOS TILE
 VB VINYL BASE

COLOR SCHEDULE & LEGEND

SCHEDULED COLORS

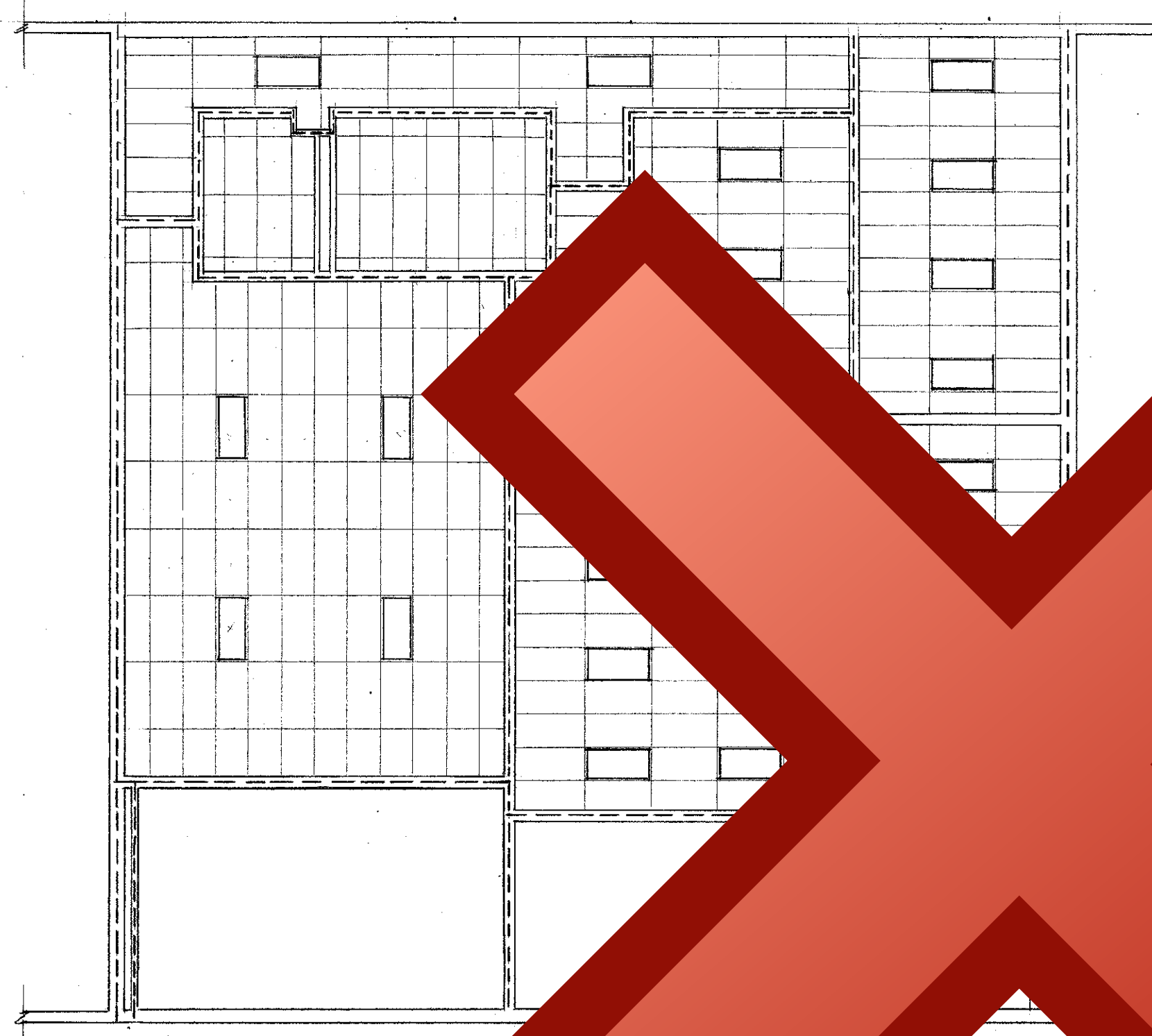
(COLOR LOCATIONS INDICATED ON FINISH SCHEDULE BENEATH FINISH MATERIAL.)

- | | |
|---------------------|---------------------|
| 1. SHERWIN WILLIAMS | BM 11-9 |
| 2. SHERWIN WILLIAMS | BM 30-25 |
| 3. SHERWIN WILLIAMS | BM 8-18 |
| 4. SPECTRA-GLAZE | DEEP MUSHROOM BROWN |
| 5. SPECTRA-GLAZE | DEEP KINGSTON BLUE |
| 6. ARMSTRONG | 51838 |
| 7. AMERICAN OLEAN | BONE |
| 8. ROPPE RUBBER | BROWN 10 |

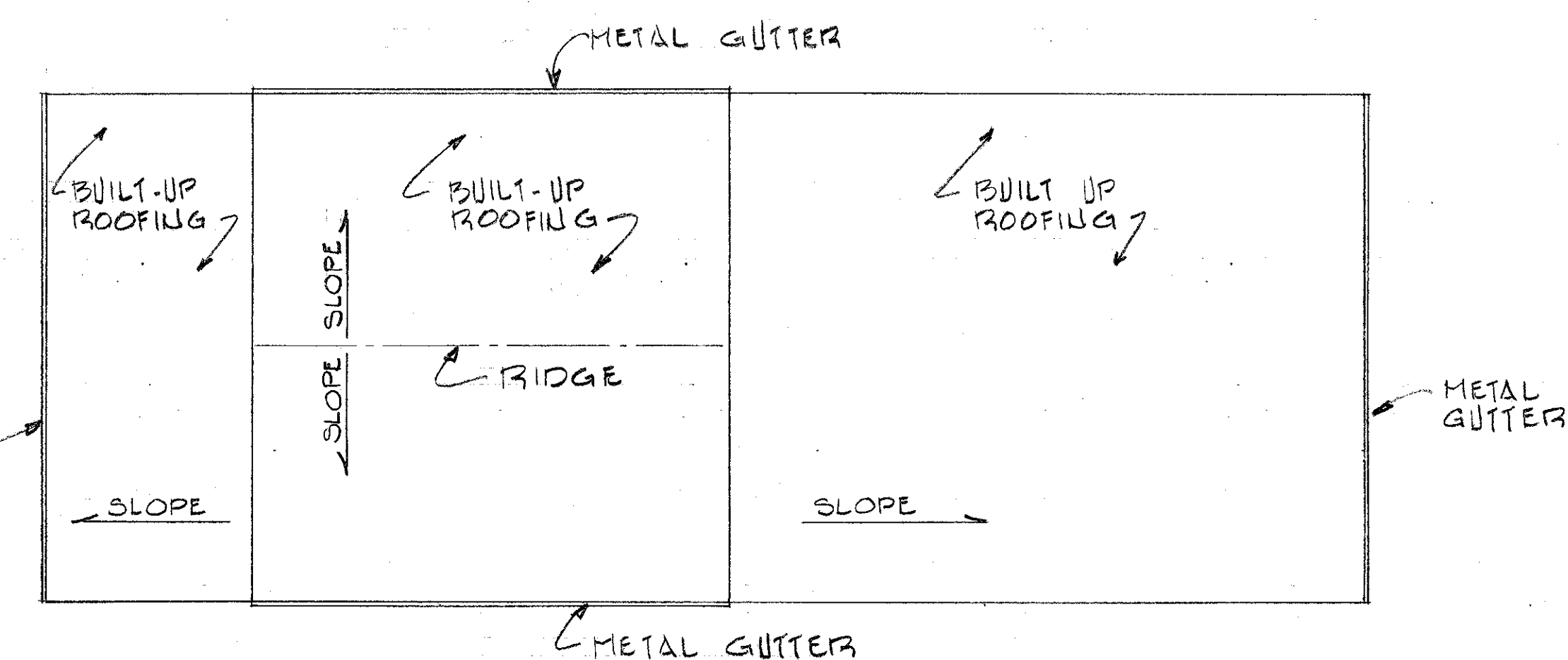
- | | |
|---|---------------------------|
| 9. TOILET PARTITIONS AND PLASTIC LAMINATE | WILSON ART 1572 |
| 10. DOORS, FRAMES AND EXTERIOR TRIM | SHERWIN WILLIAMS BM 39-8 |
| 11. DEEP RIB EXTERIOR METAL WALL PANELS | SHERWIN WILLIAMS BM 12-26 |

NOTE:
 MANUFACTURERS TRADE NAMES ARE USED TO REFER TO COLOR AND FINISH ONLY.
 OTHER BRANDS OF SIMILAR CHARACTERISTICS ARE ACCEPTABLE.

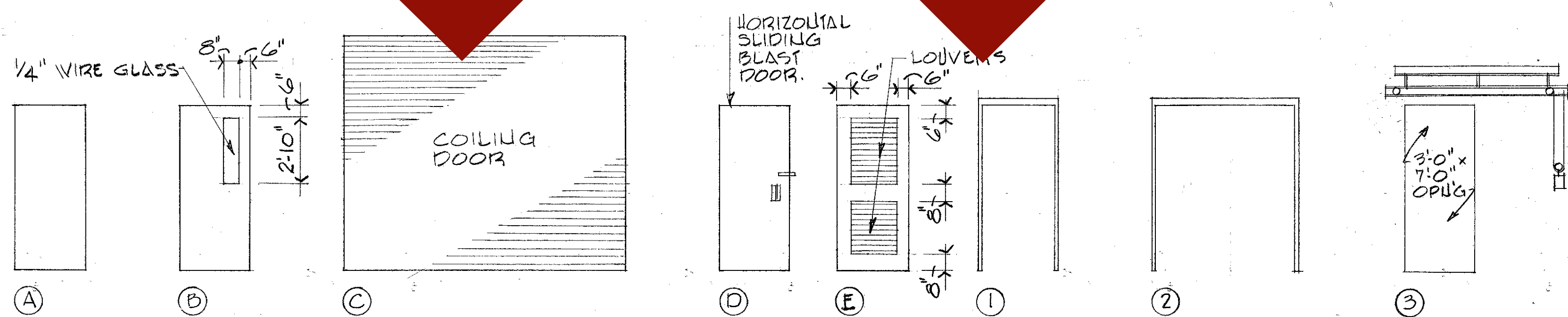
NOTE
 DOTTED LINE INDICATES 1 HOUR RATED WALL.



PARTIAL REFLECTED CEILING PLAN - BLDG 1816
 1/8" = 1'-0"

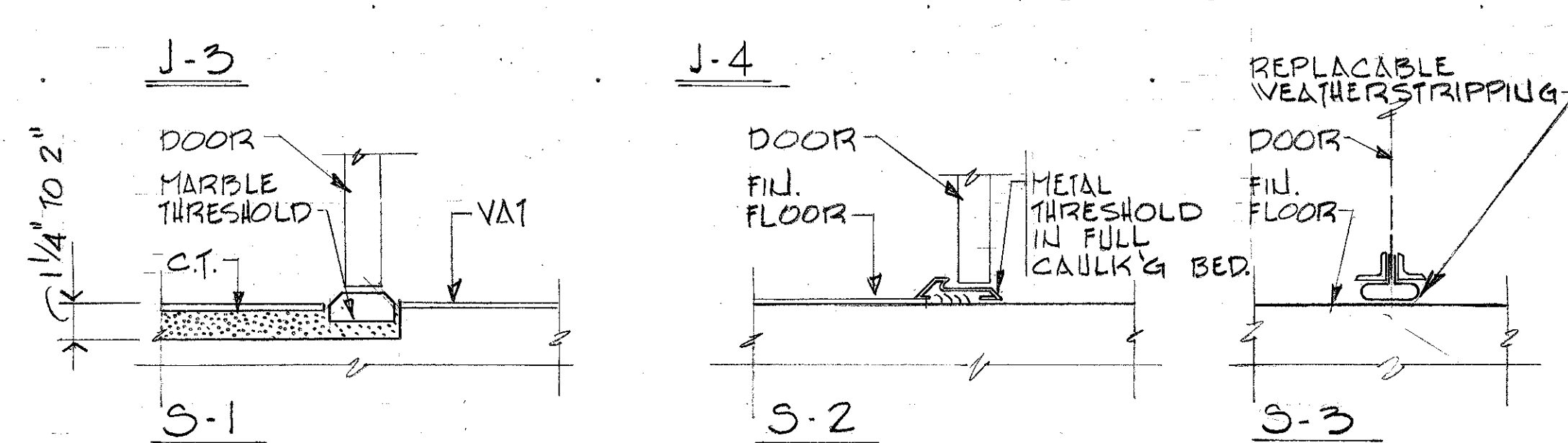
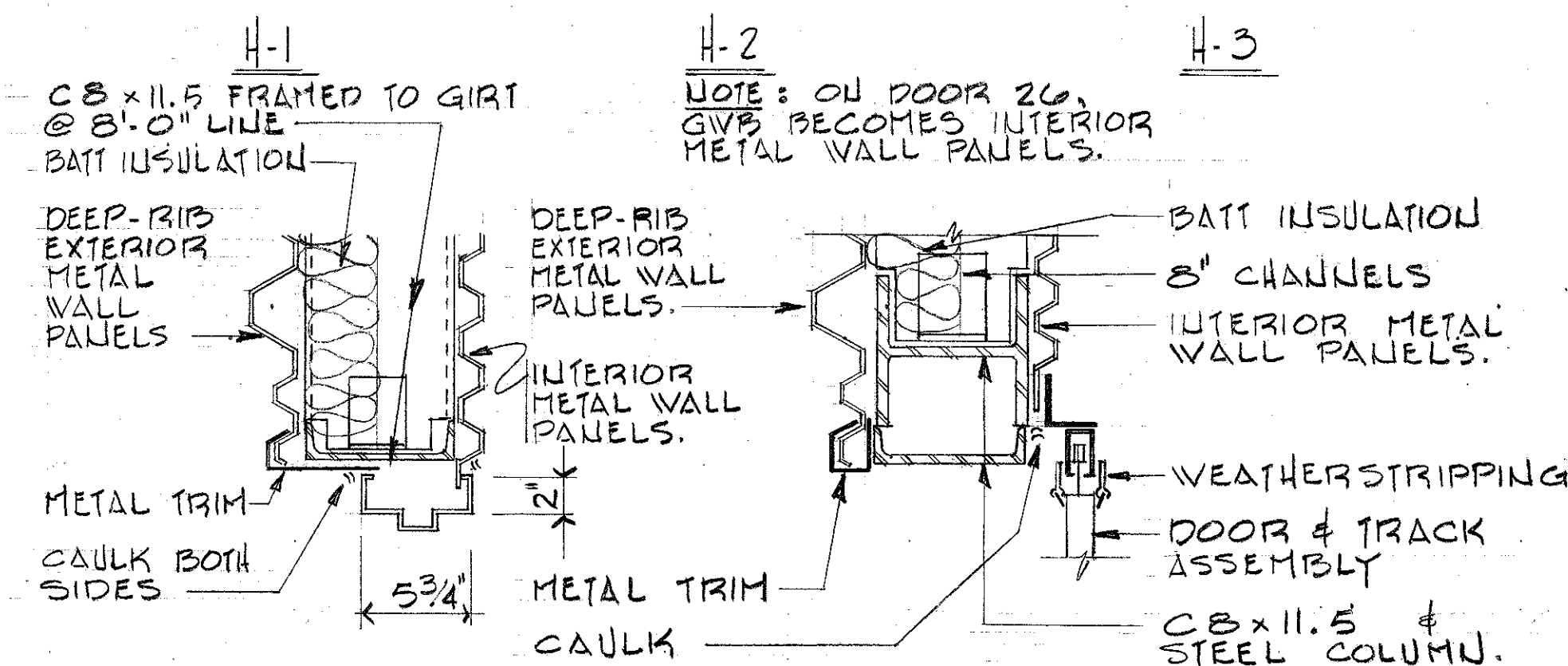
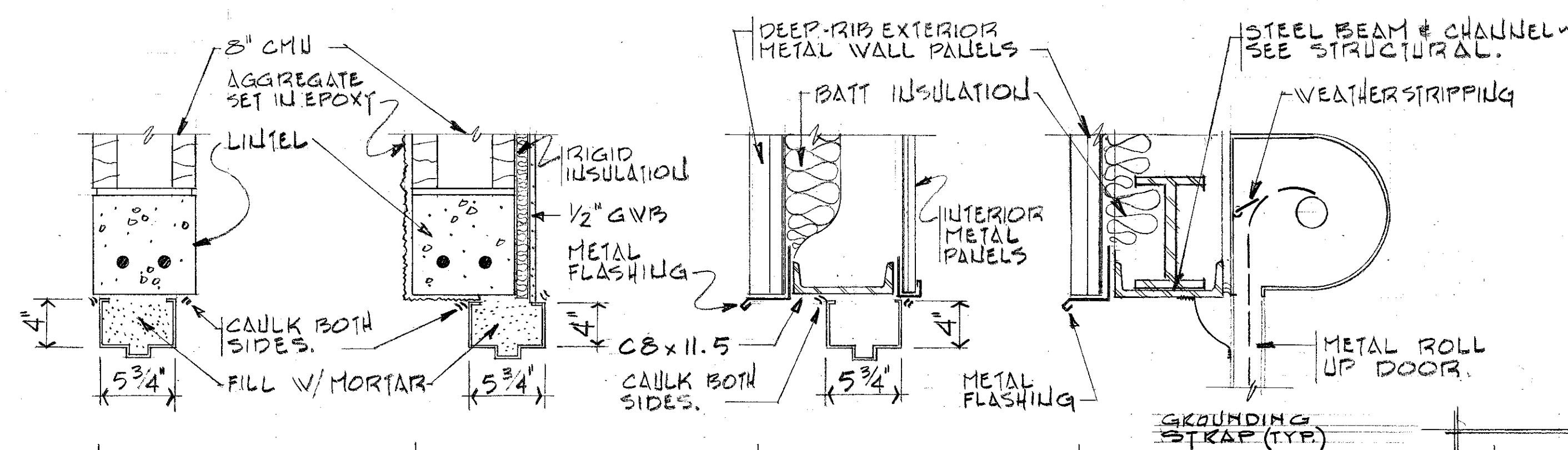


ROOF PLAN - BLDG 1816
 1/16" = 1'-0"



DOOR TYPES
 NO SCALE

FRAME TYPES
 NO SCALE



DOOR & FRAME DETAILS:
 1/2" = 1'-0"

GRAPHIC SCALES:

0' 8' 16' 24' 32' 40' 48'

1/16" = 1'-0"

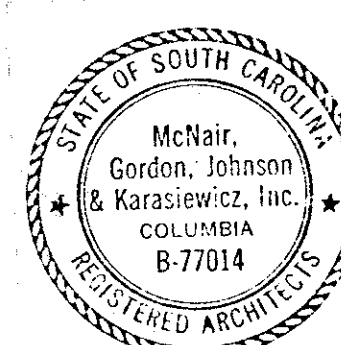
0' 4' 8' 12' 16' 20' 24'

1/8" = 1'-0"

0' 1' 2'

1/2" = 1'-0"

AS-BUILT

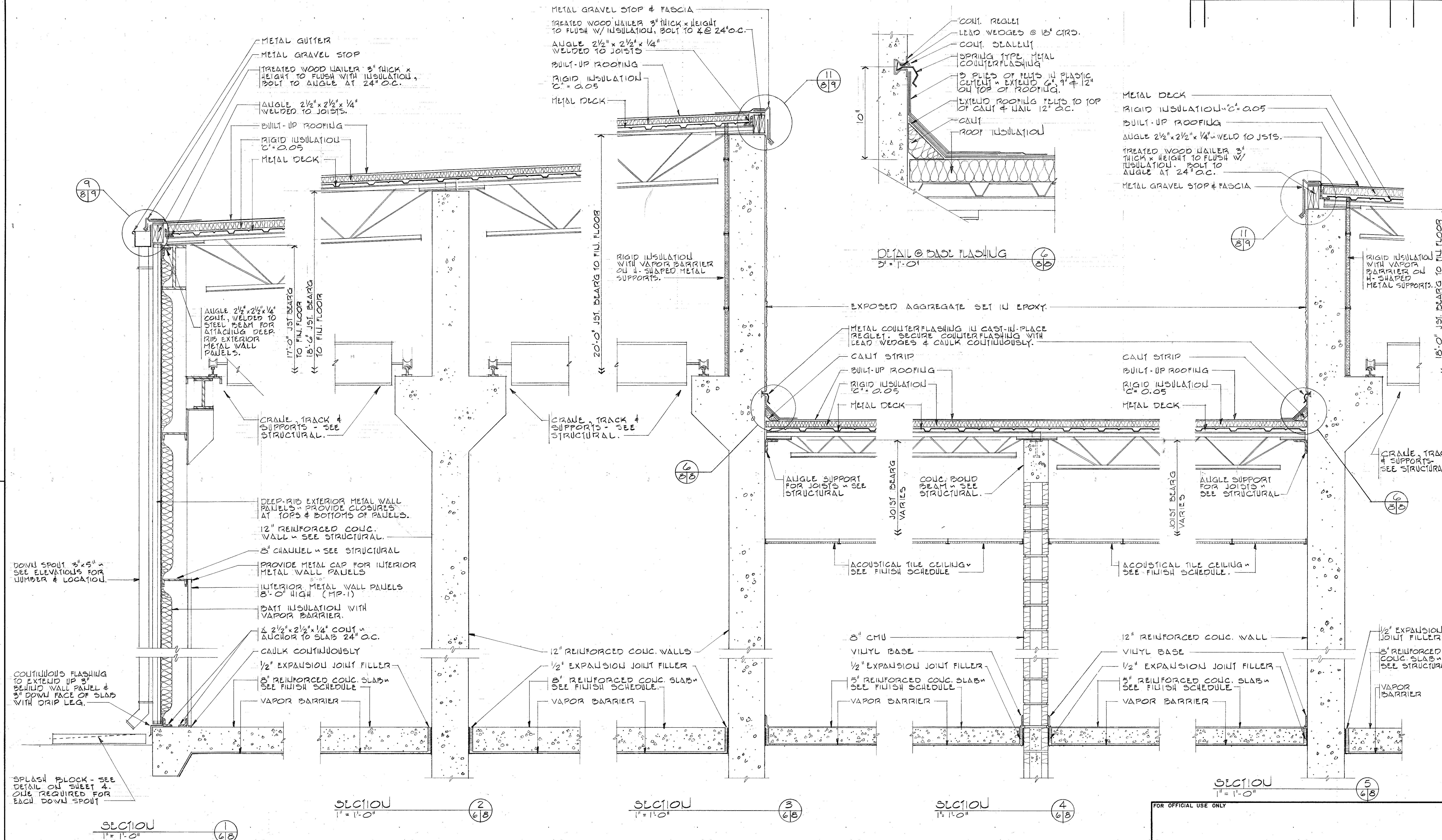


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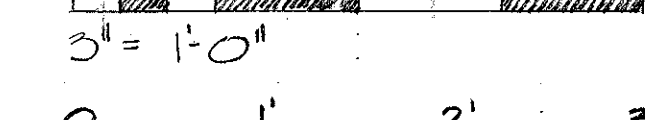
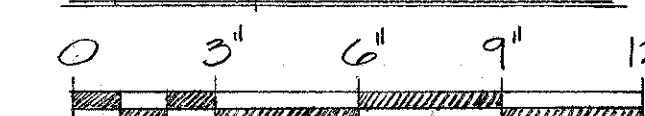
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DESIGNER: DR. PEAK, CHK. JOHNSON SUPERVISOR: CH. ENGR. SUBMITTER: J. L. JOHNSON DATE: 9/10/82 FORM NUMBER (TITLE) SOUTHERN DIVISION PD: J. L. JOHNSON	SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE FAC. & BLDG 1816 ROOF PLAN, REFLECTED CEILING PLAN, SCHEDULES & DETAILS.
APPROVED: [Signature] OFFICER IN CHARGE DATE: 11/17/82 EFD FOR COMMANDER, NAFAC	NAVFAC DRAWING NO. 5071260 CONSTR CONTR NO. 162401-80-C-0026 SPEC 06-80-0026 SHEET 7 OF 25

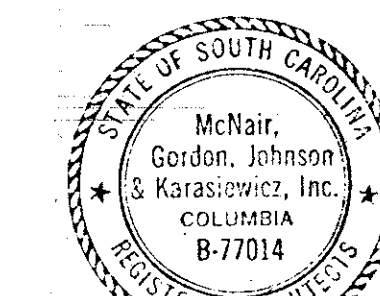
REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED



GRAPHIC SCALES:

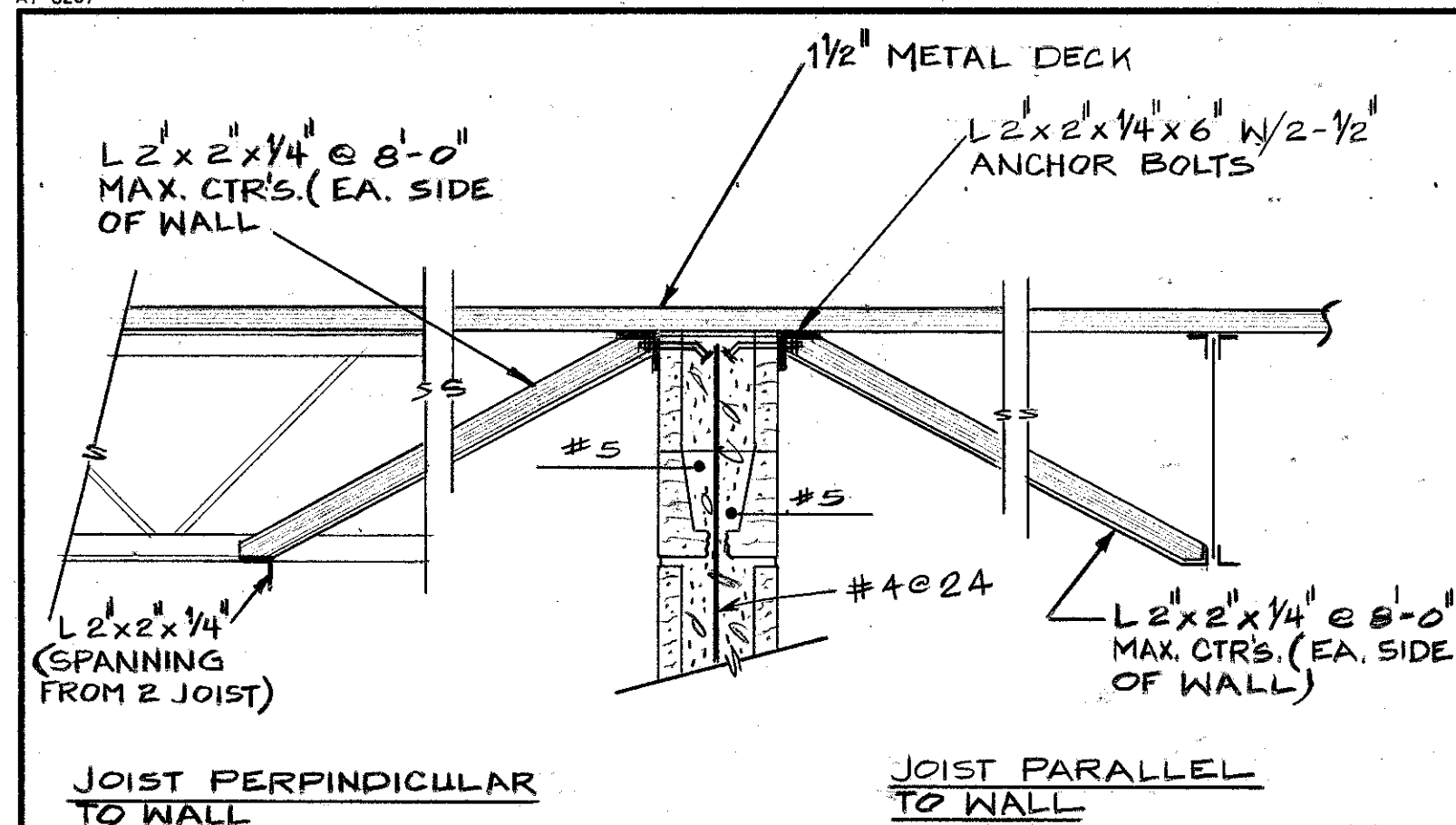


AS-BUILT



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DESIGNER: DR. PEAK, CH. JOHNSON SUBMITTED BY: CH. JOHNSON DATE: 11/10/80 SOUTHERN DIV - DESIGN DIVISION P.O. BOX 84, COLUMBIA, S.C. 29202	SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE FAC. & BLDG 1816 SECTION 5
APPROVED: [Signature] OFFICER IN CHARGE: [Signature] DATE: 11/12/80 EFD FOR COMMANDER, NAVFAC	SIZE: 80091 NAVFAC DRAWING NO.: 5071261 CONSTRUCTION NO.: 462467-80-C-0024 SCALE: AS NOTED SPEC: 06-80-0024 SHEET 8 OF 25

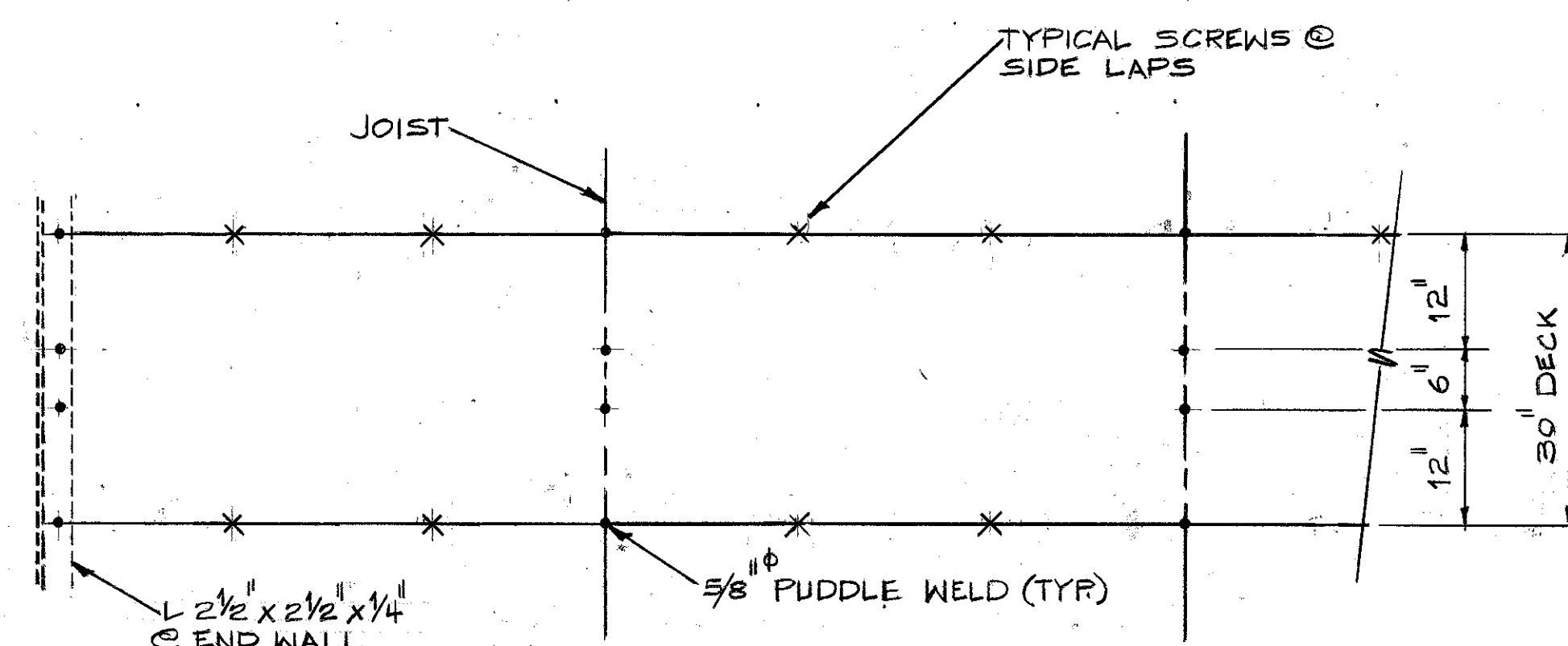


INTERIOR WALL LATERAL BRACING @ WALL TO METAL DECK

1" = 1'-0"

SECTION 1

1" = 1'-0"

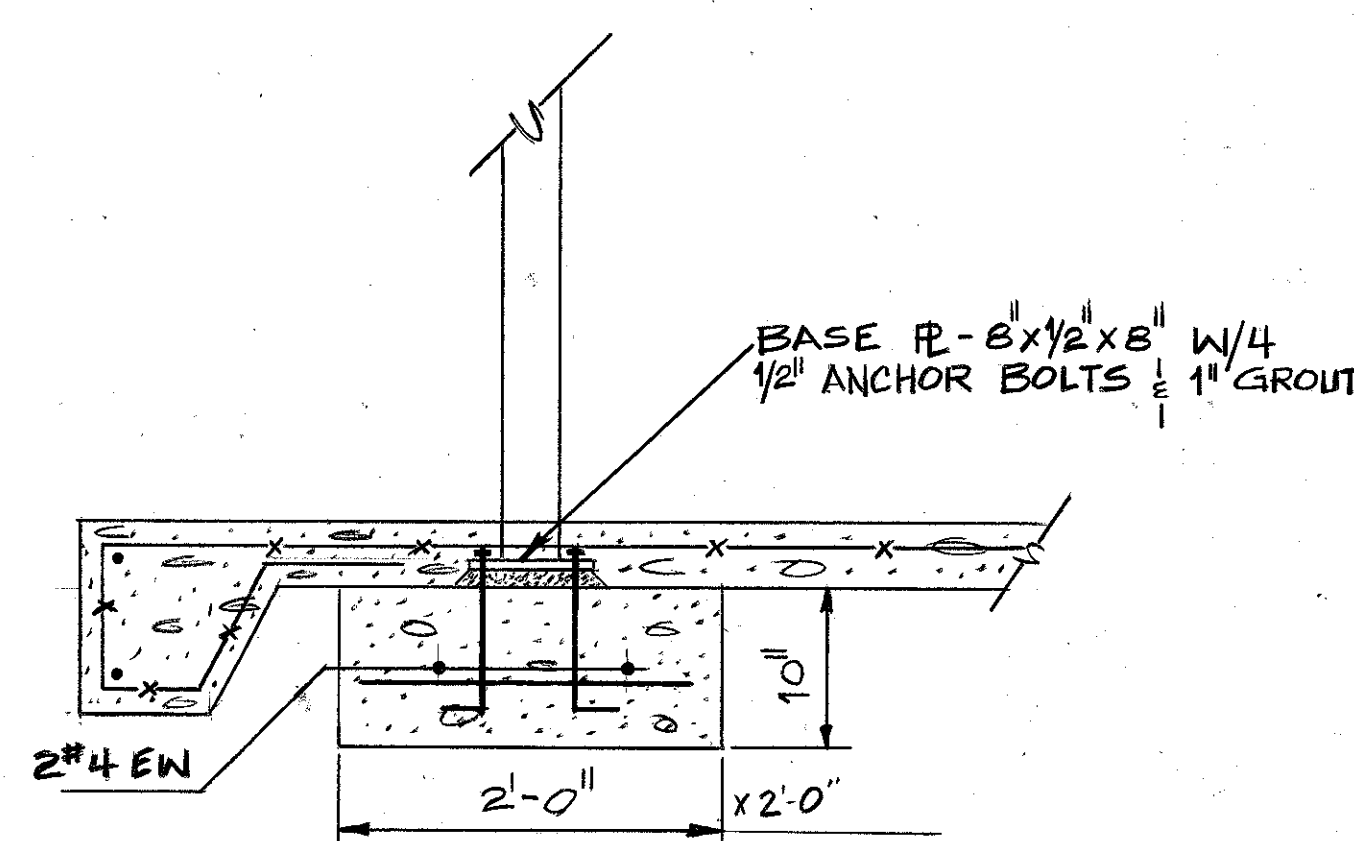


TYPICAL WELDING PATTERN FOR METAL DECK

3/4" = 1'-0"

GENERAL NOTES:

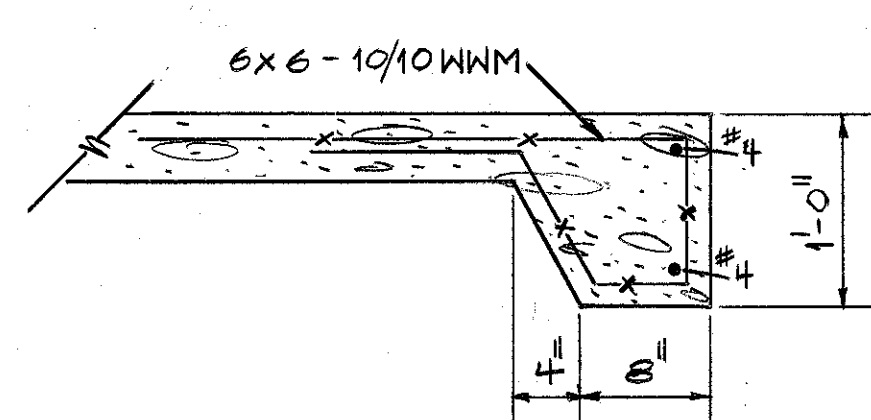
1. ALL REINFORCING TO HAVE A MINIMUM YIELD STRENGTH OF 60000 PSI.
2. ALL CONCRETE TO HAVE A COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS.
3. FOOTING DESIGN FOR A SOIL BEARING VALUE OF 2000 PSF.
4. ALL MISC. AND STRUCTURAL STEEL TO BE A-36.
5. ALL BOLTS TO BE 3/4", A-325, UNF.
6. USE 2" S/S CONT. IN LINTEL BLOCK FOR ALL MASONRY OPENINGS FOR SPANS TO 6'-0" (SUCH AS OPENING CAUSED BY DUCTWORK). TYP. UNLESS NOTED OTHERWISE.
7. CHECK W/ VARIOUS TRADES FOR SLEEVES, OPENINGS, CONDUITS, ETC. BEFORE PLACING CONCRETE.
8. STRUCTURE DESIGNED TO RESIST FOLLOWING LOADS:
 - (A) SEISMIC: ZONE 3-HIGH LOSS, IN ACCORDANCE W/ AFM 88-3 CHAPTER 13.
 - (B) WIND: IN ACCORDANCE W/ ANSI A58.1-72, 90 MPH.
 - (C) ROOF DESIGNED FOR A 20 PSF LIVE LOAD.
9. AFTER STEEL BR'G, R'S HAVE BEEN PROPERLY LOCATED AND ALIGNED GROUT R'S SOLIDLY W/ GROUT WORKED UNDER STEEL TO COMPLETELY FILL SPACE.



SECTION 4

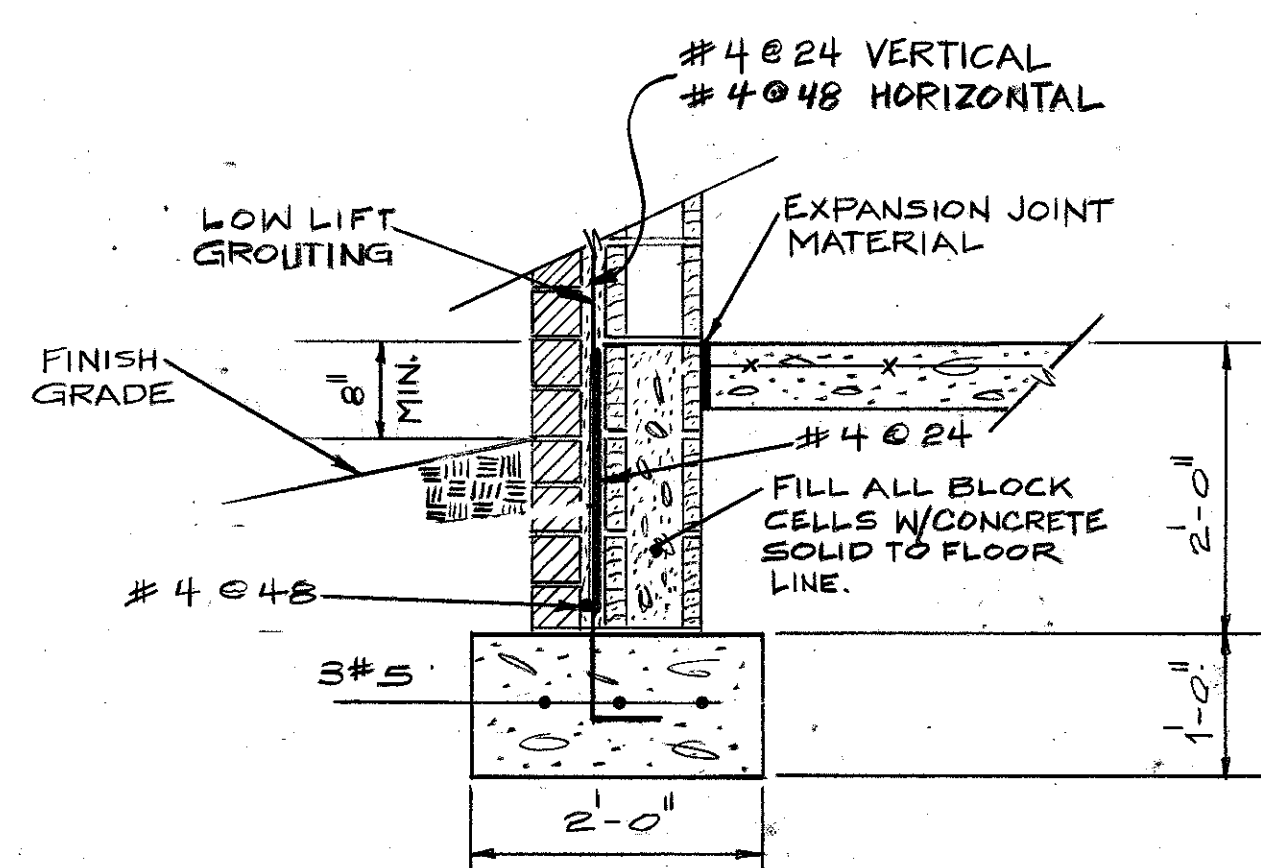
10/10

3/4" = 1'-0"



TYPICAL TOE FOOTING

1" = 1'-0"



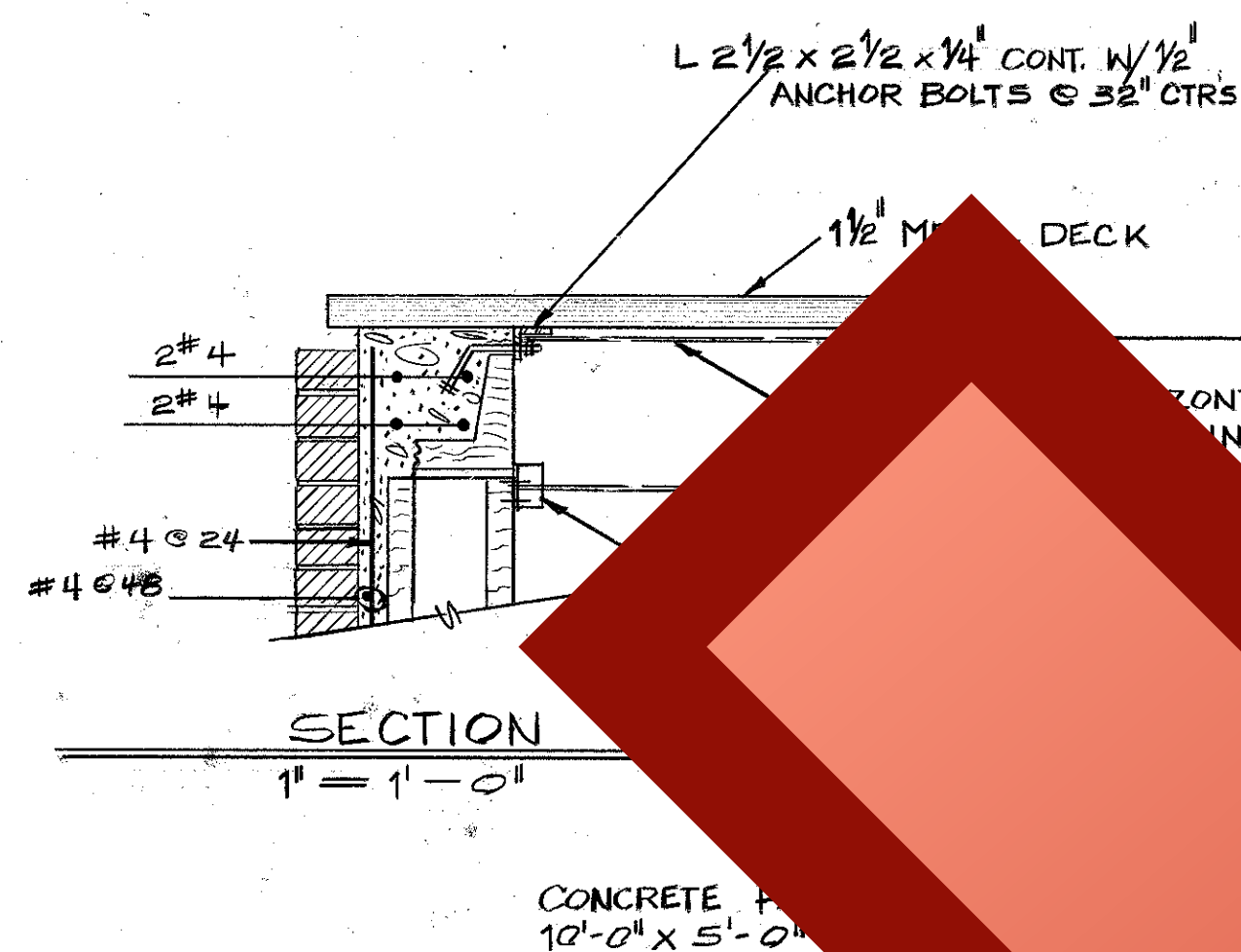
TYPICAL EXTERIOR WALL FOOTING

3/4" = 1'-0"

NOTE: ALL NOTES & DETAILS THIS SHEET APPLY TO HYDRAZINE FACILITY ONLY.

TYPICAL INTERIOR MASONRY WALL

1" = 1'-0"



SECTION 1

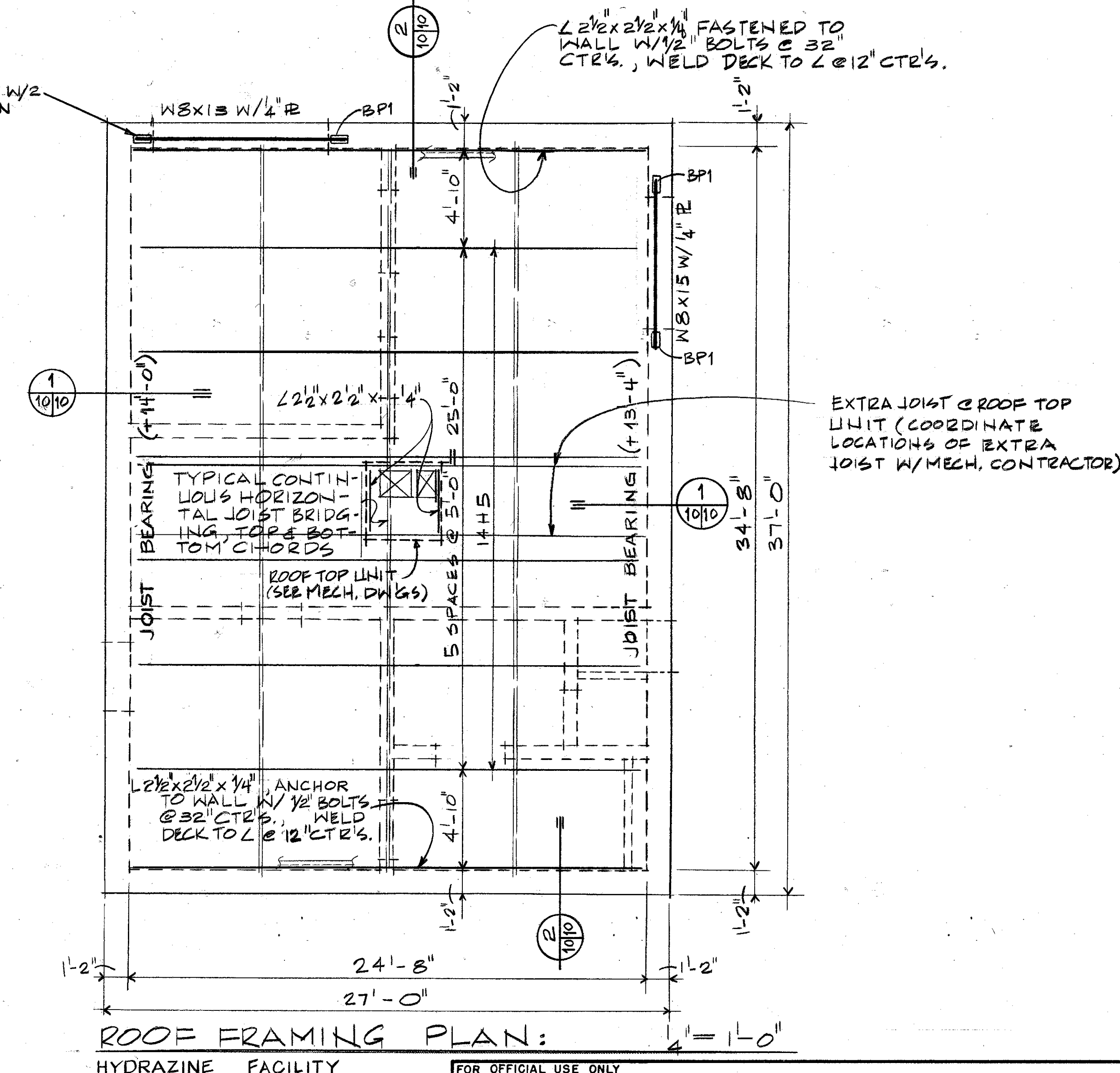
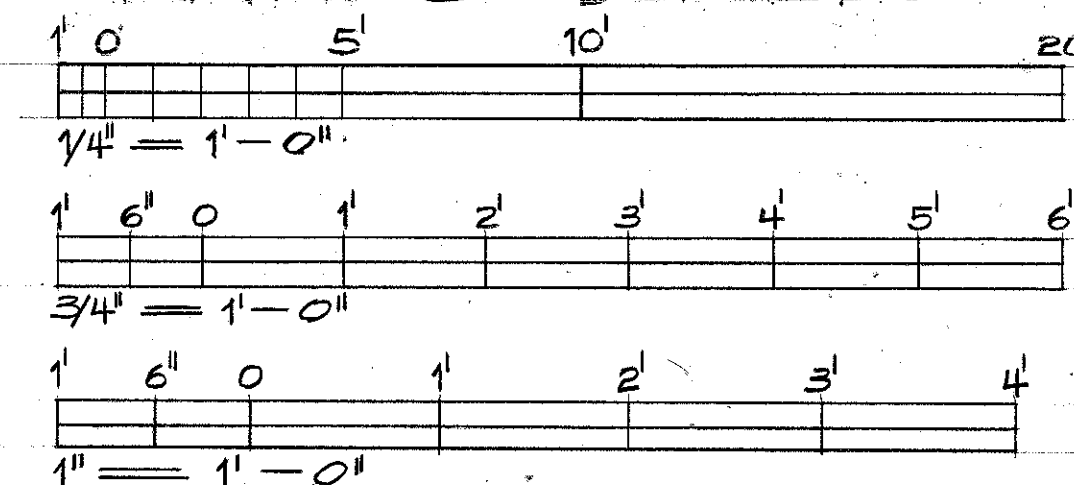
1" = 1'-0"

SECTION 2

3/4" = 1'-0"

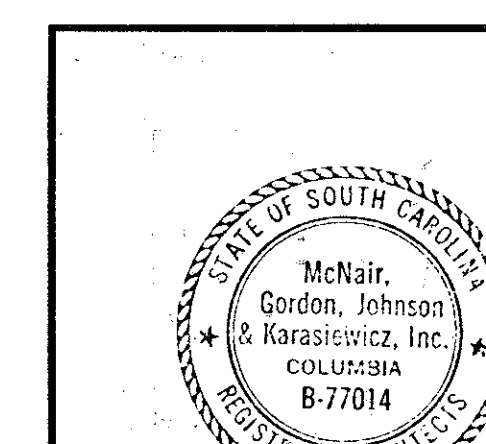
FOUNDATION PLAN: HYDRAZINE FACILITY

GRAPHIC SCALES



ROOF FRAMING PLAN: HYDRAZINE FACILITY

4" = 1'-0"



AS-BUILT

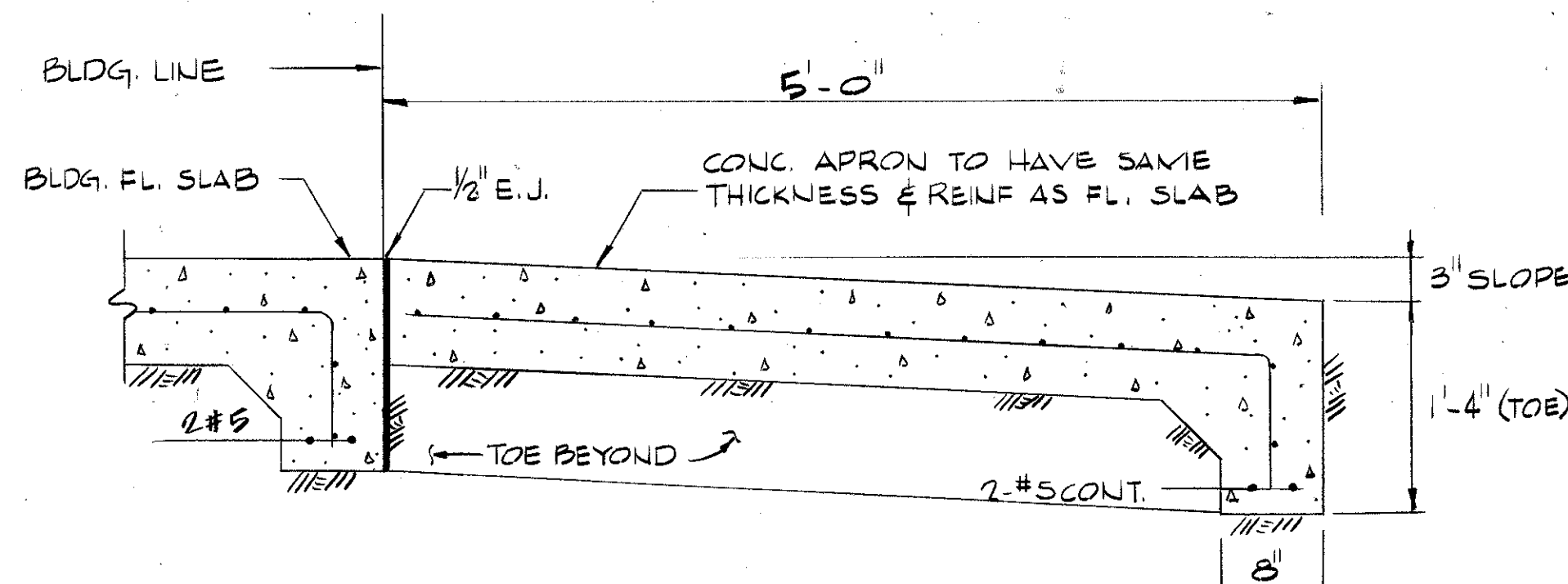
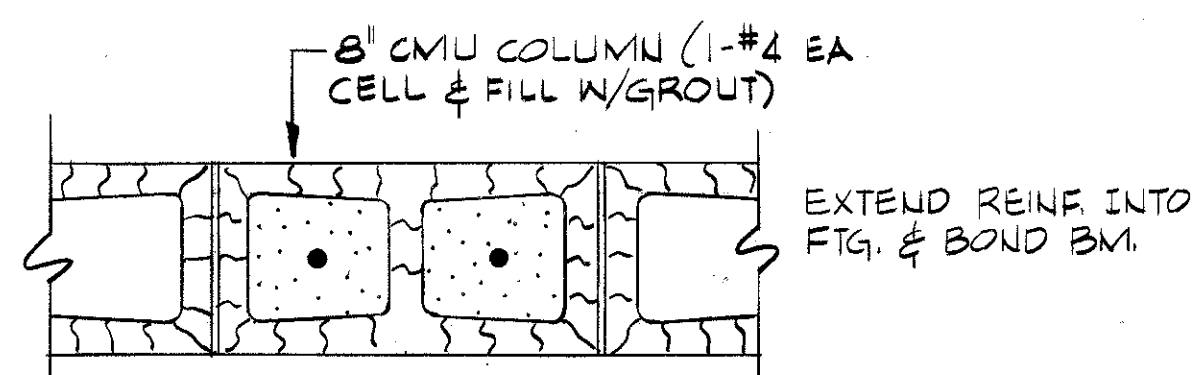
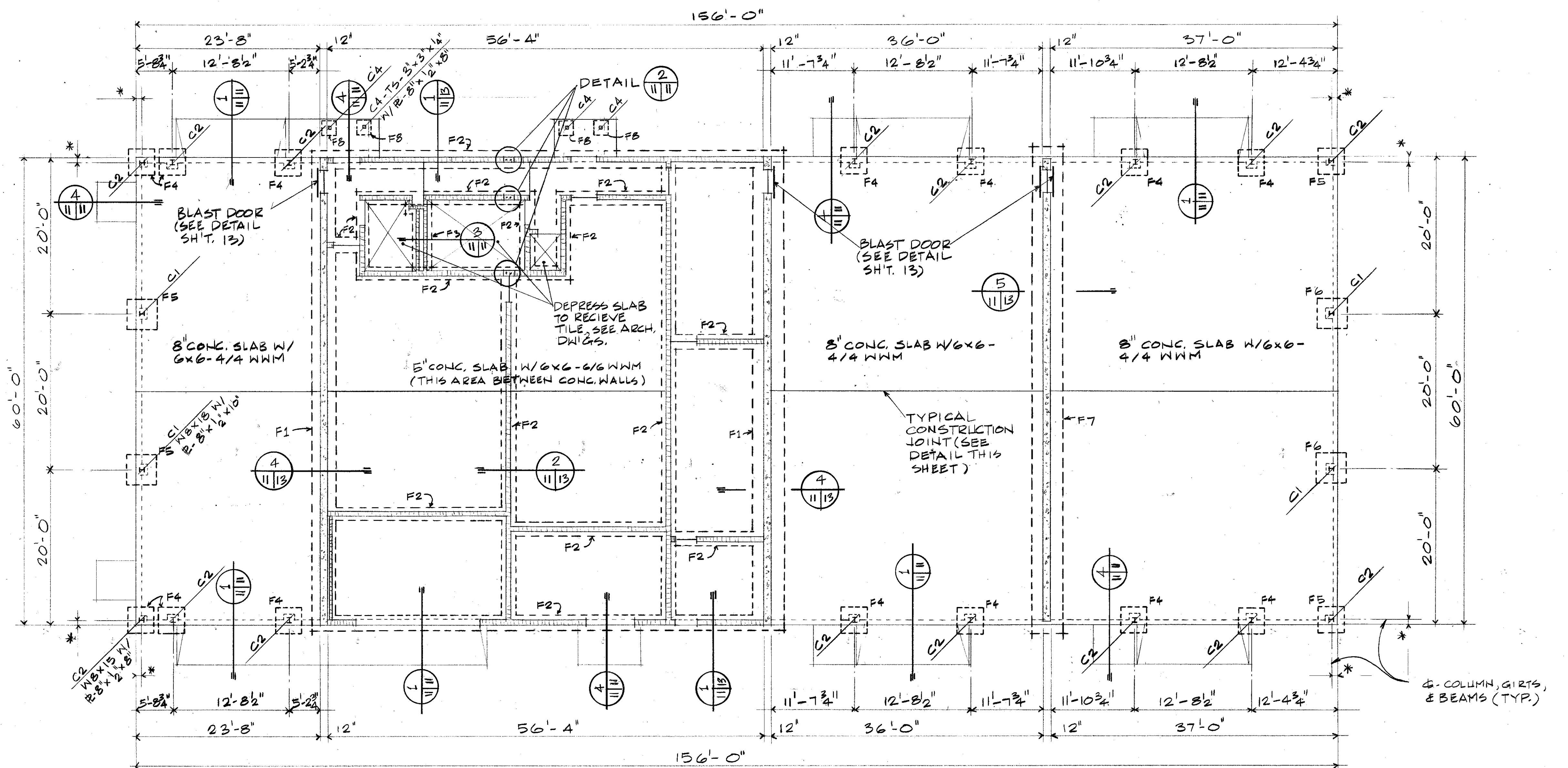
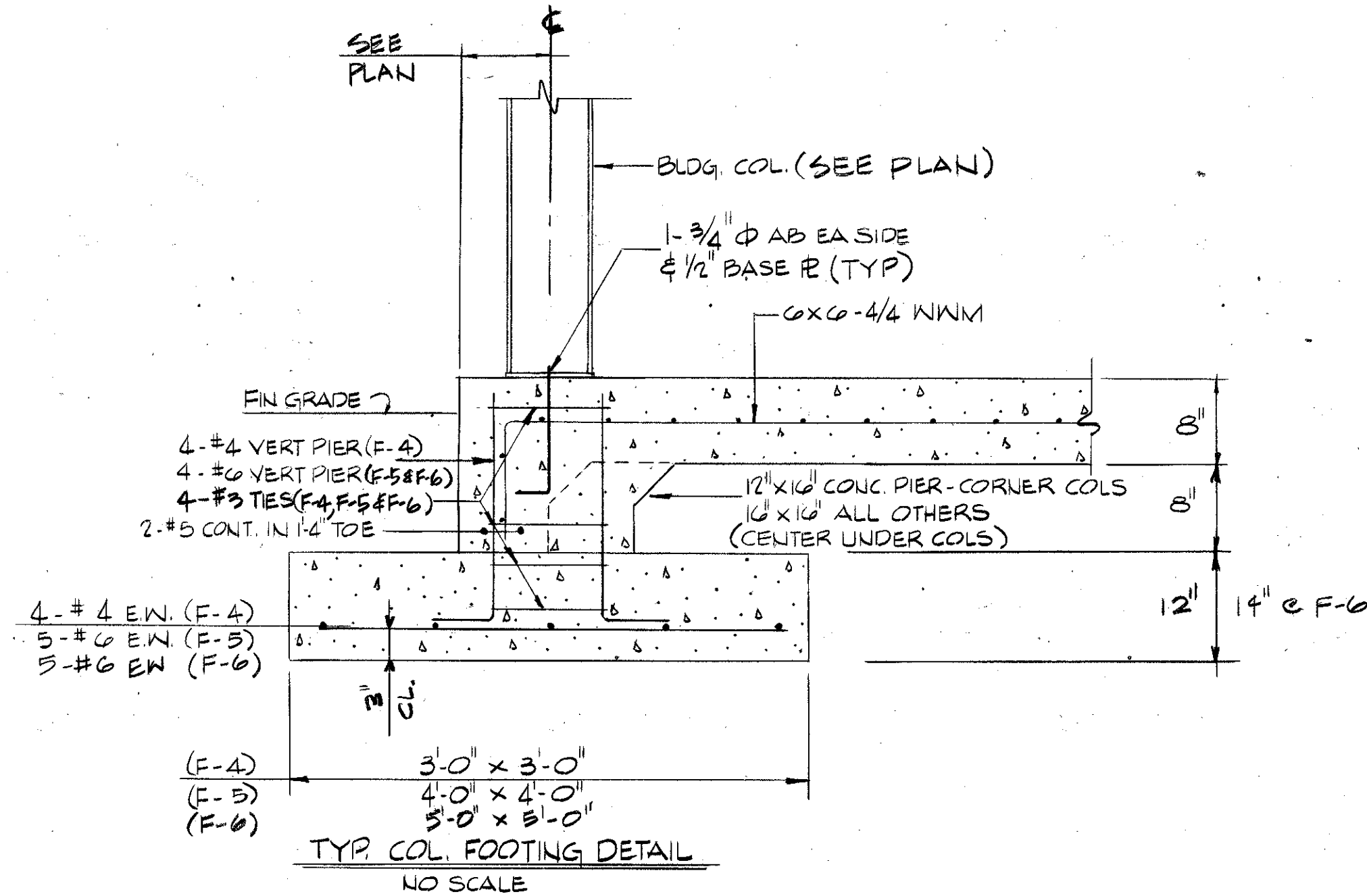
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DESIGN/CONSTRUCTION	CHN/MSB	SHAW AIR FORCE BASE	SOUTH CAROLINA
SUBMITTER	CH ENGR	HYDRAZINE FAC. & BLDG 1816	
DATE	7/10/80	FOUNDATION & ROOF FRAMING PLANS, NOTES & STRUCTURAL DETAILS	
DESIGNER/TITLE	CH ENGR	SIZE CODE IDENT NO. NAVFAC DRAWING NO.	
APPROVED	DATE	5071263	
OFFICER IN CHARGE	DATE	F 80091	
APPROVED	DATE	CONSTR CONTR NO. 462467-80-0000	
ED FOR COMMANDER, NAVFAC	DATE	SCALE AS NOTED SPEC 06-80-0000 SHEET 10 OF 25	

GENERAL NOTES:

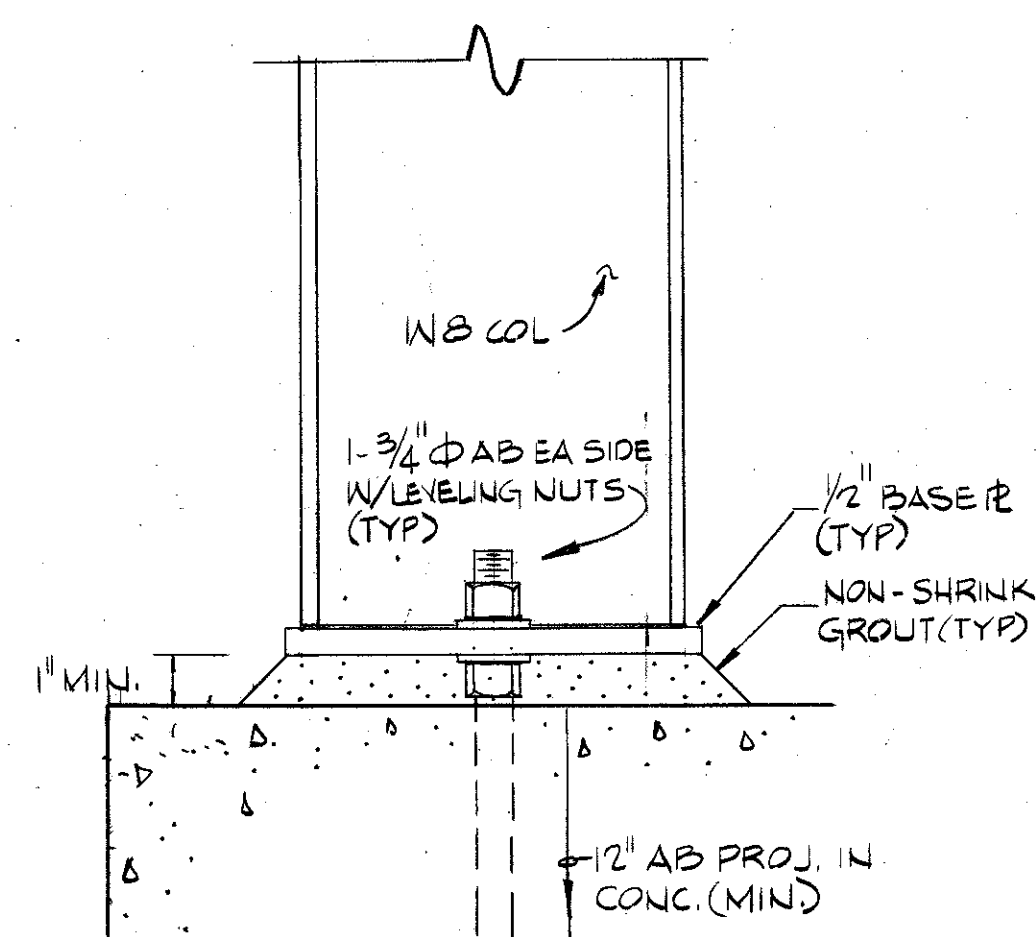
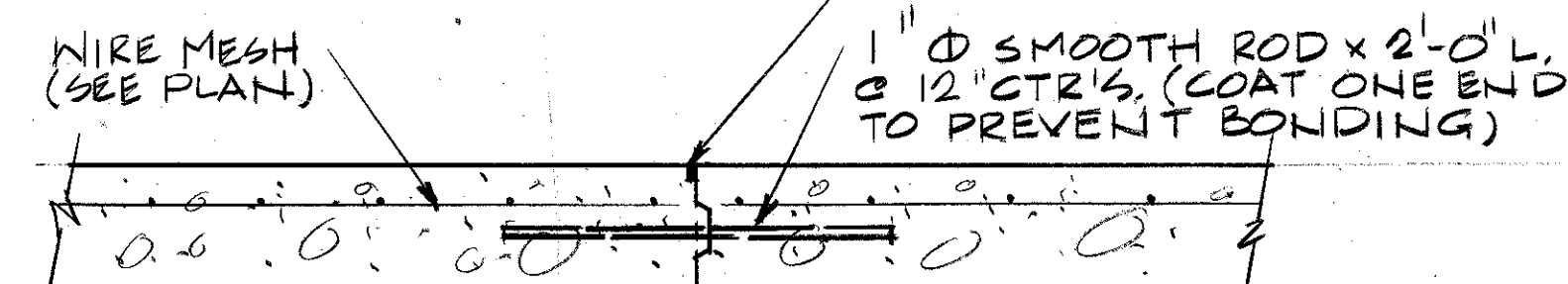
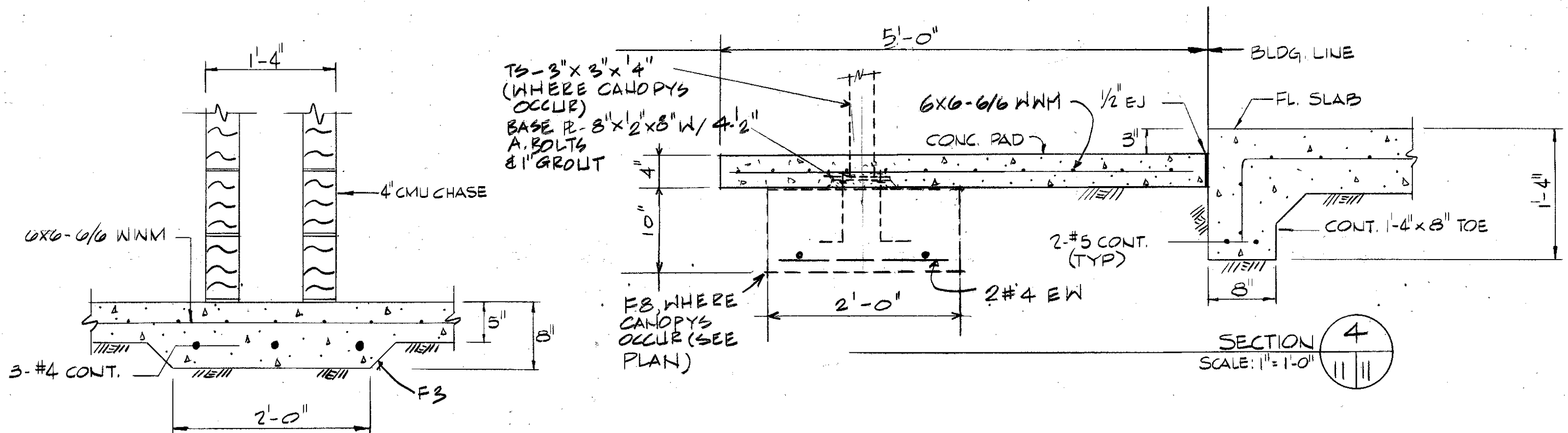
1. ALL REINFORCING TO HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI.
2. CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS:
 - A. 8" GRADE SLABS, 5000 PSI.
 - B. ALL OTHER CONCRETE, 3000 PSI.
3. FOOTINGS DESIGN FOR A SOIL BEARING VALUE OF 2000 PSF.
4. ALL MISC. AND STRUCTURAL STEEL TO BE A-36.
5. ALL BOLTS TO BE 3/4", A-325, U.N.O.
6. USE 2#3'S CONT. IN LINTEL BLOCK FOR ALL MASONRY OPENINGS FOR SPANS TO 6'-0" (SUCH AS OPENING CAUSED BY DUCTWORK). TYPICAL UNLESS NOTED OTHERWISE.
7. CHECK W/ VARIOUS TRADES FOR SLEEVES, OPENINGS, CONDUITS, ETC. BEFORE POURING CONCRETE.
8. STRUCTURE DESIGNED TO RESIST FOLLOWING LOADS:
 - A. SEISMIC: ZONE 3- HIGH LOSS, IN ACCORDANCE W/ AFM 88-3 CHAPTER 13.
 - B. WIND: IN ACCORDANCE W/ ANSI A58.1-72, 90 MPH.
 - C. ROOF DESIGNED FOR A 20 PSF LIVE LOAD.

SECTION 1
SCALE: 1"=1'-0"DETAIL 2
NO SCALE

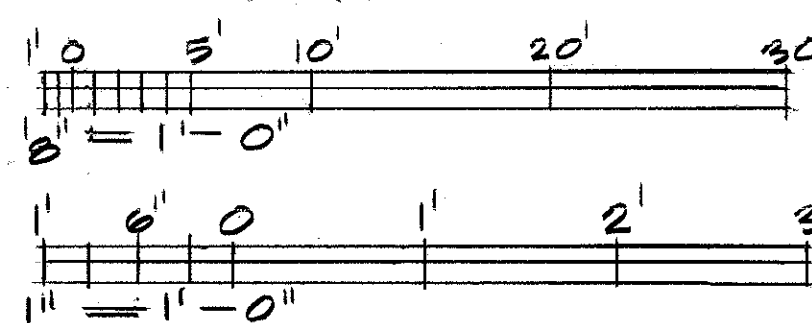
NOTE: *- DIMENSION TO BE 4" PLUS SIDING DEPTH.

FOUNDATION PLAN ~ MISSILE ASSEMBLY BLD'G. 1816

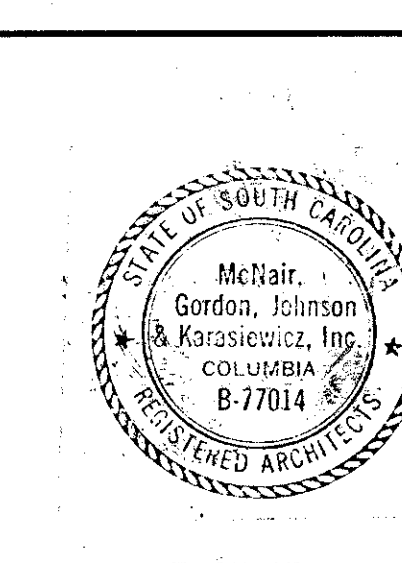
18"=1'-0"

TYP. AB DETAIL
NO SCALETYPICAL CONSTRUCTION JOINT
SCALE: 1"=1'-0"SECTION 4
SCALE: 1"=1'-0"

GRAPHIC SCALES



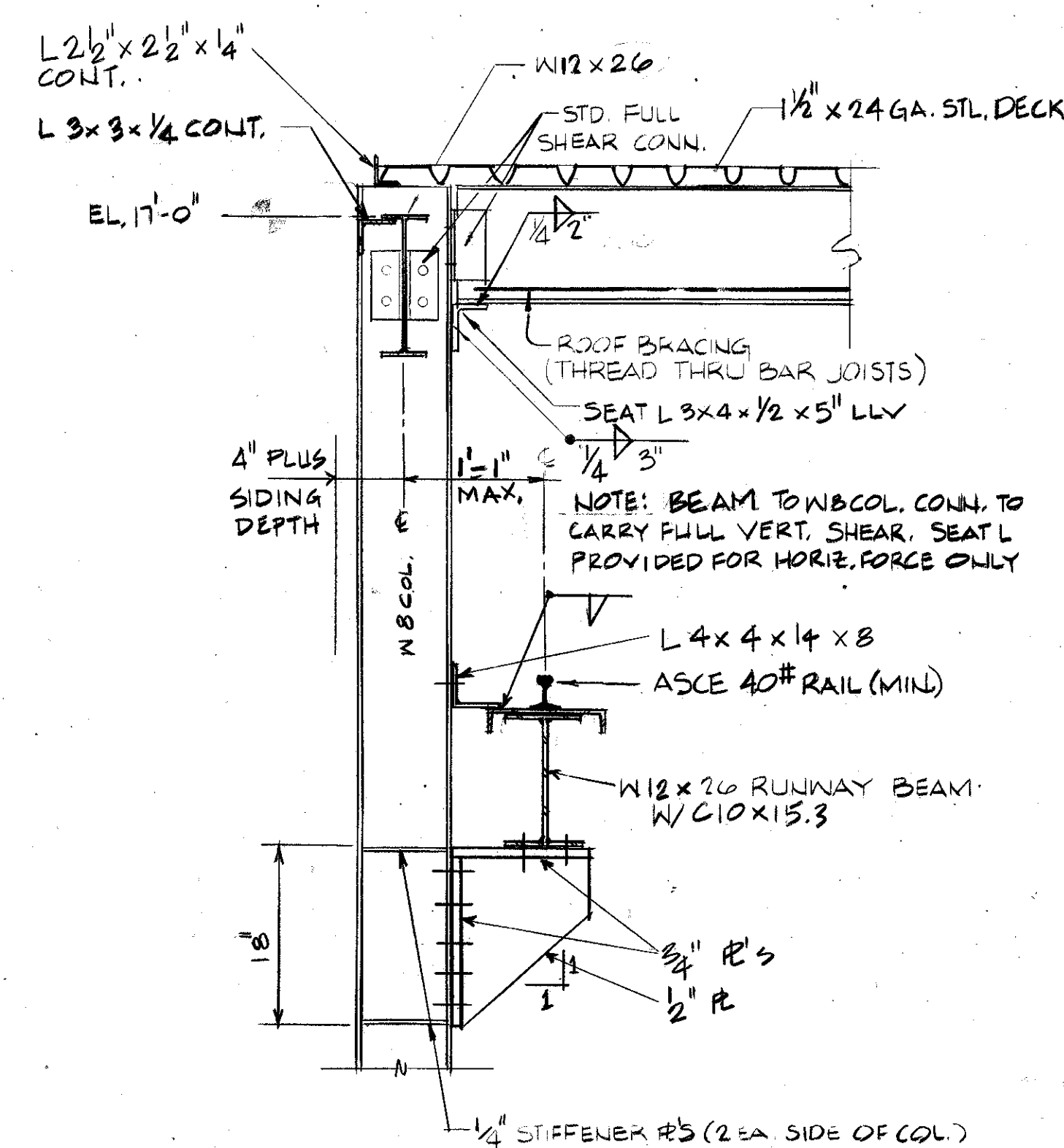
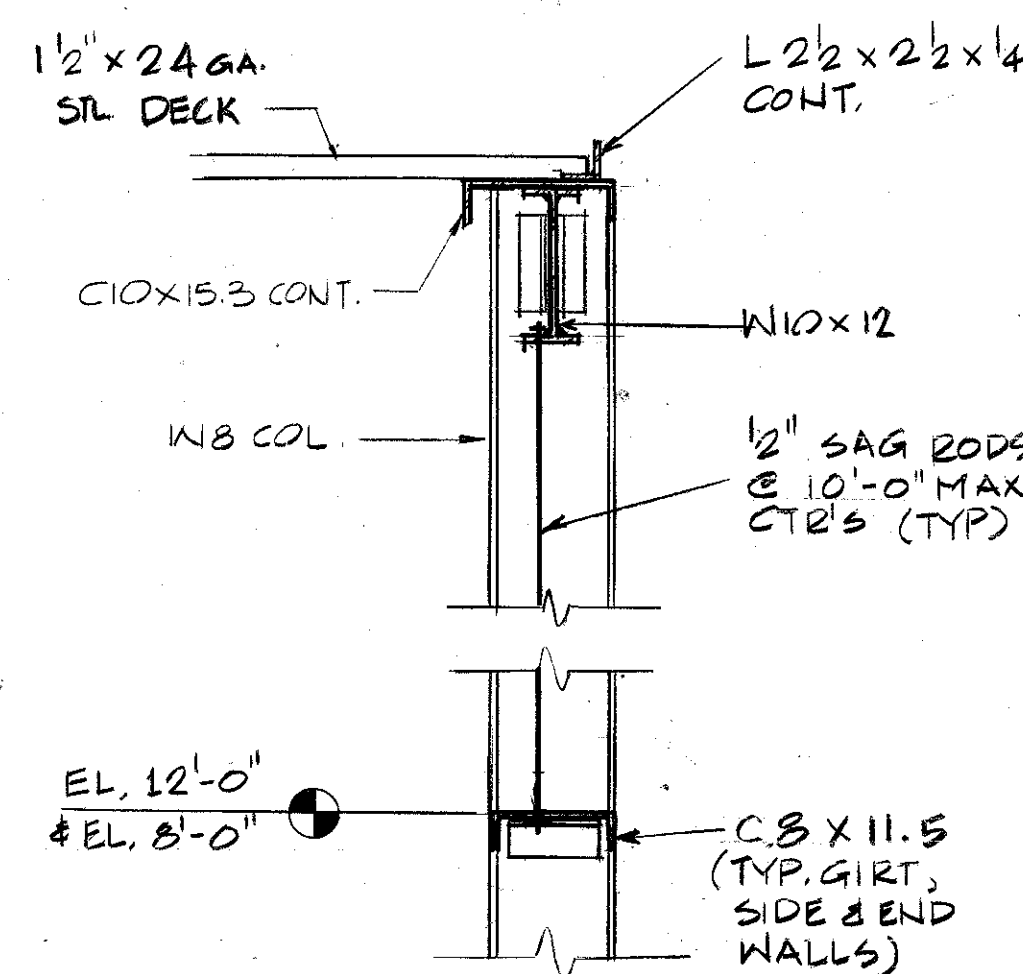
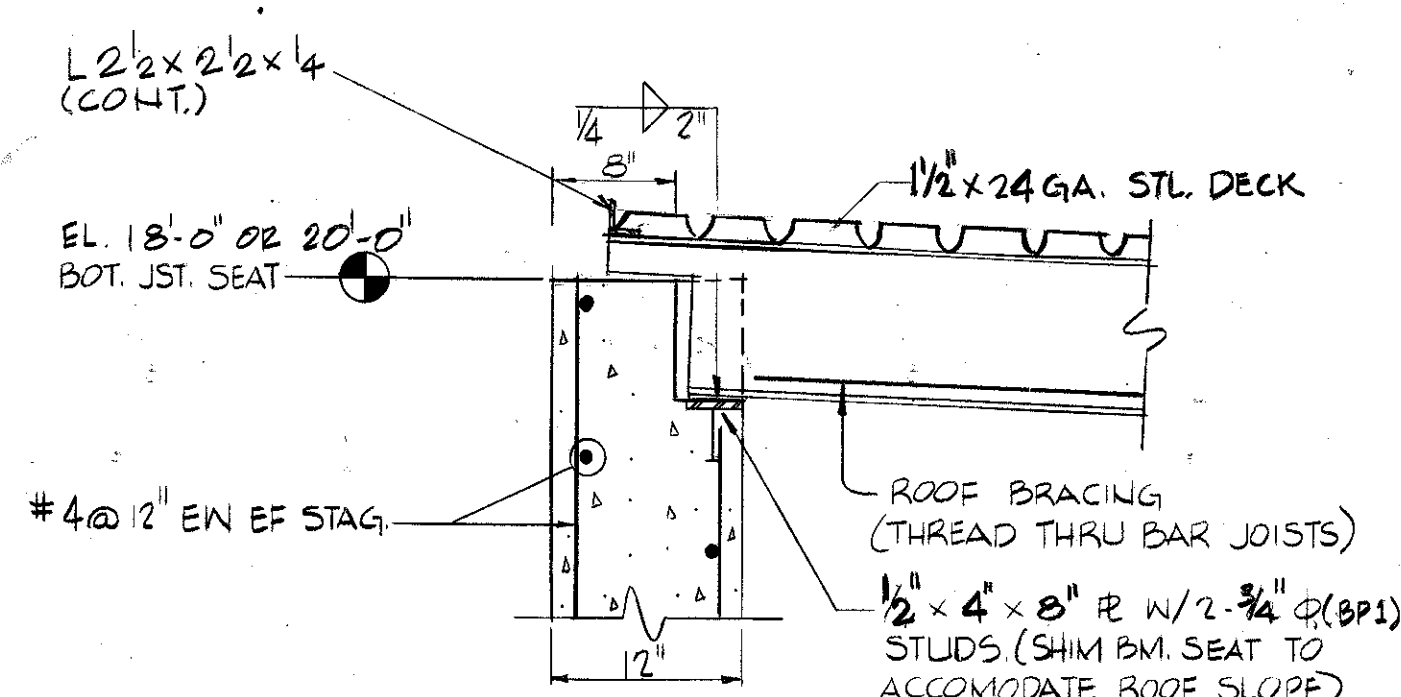
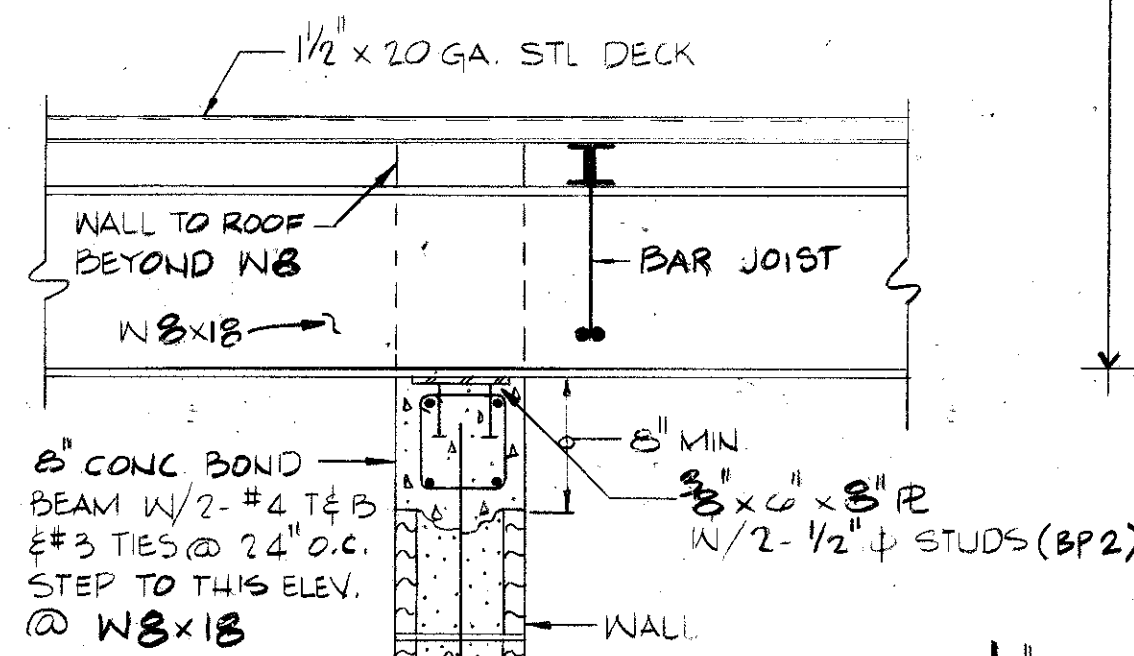
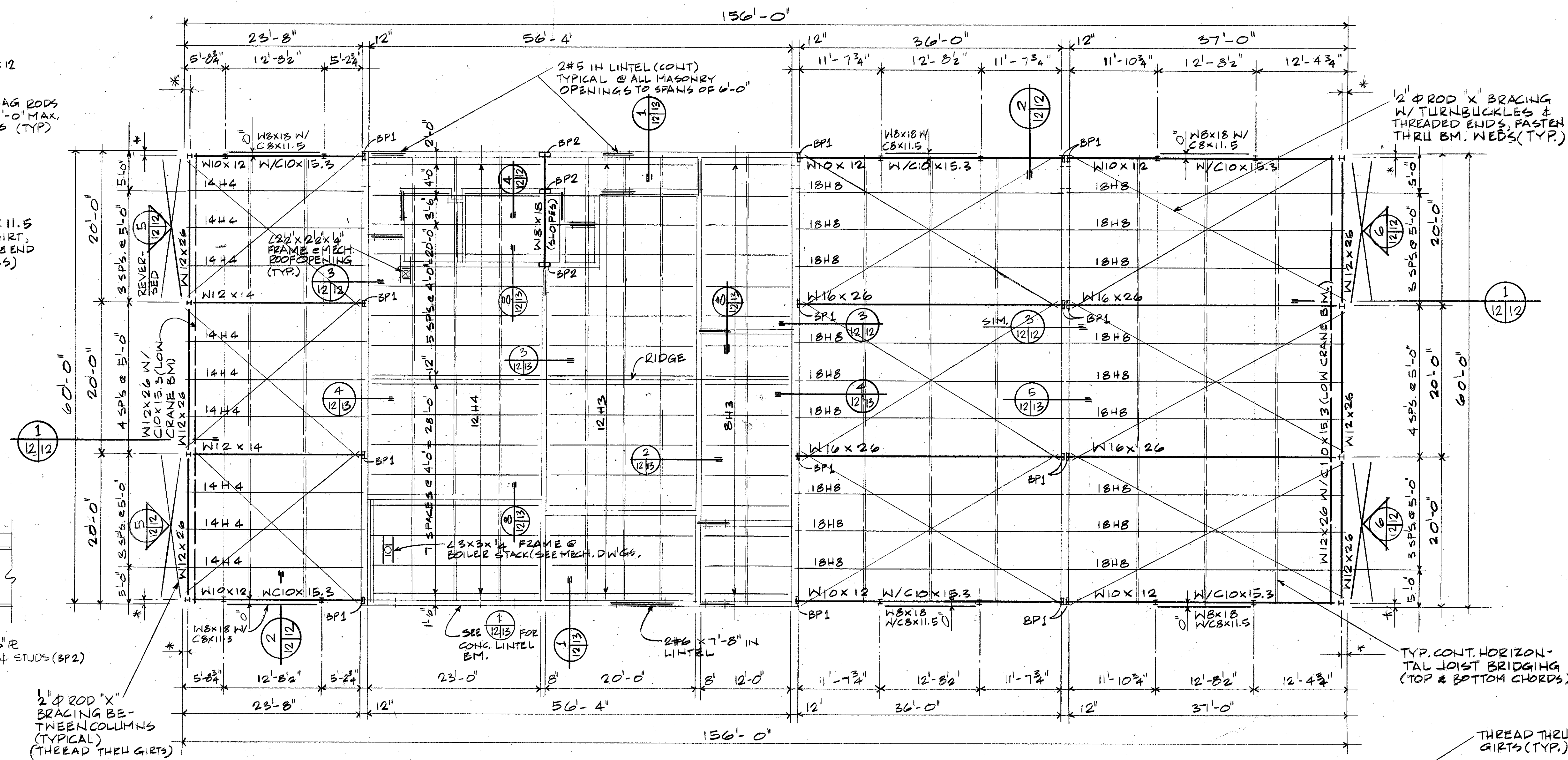
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DESGN COLLIMOR MODETE CHK HASKY SUPV HASKY CH ENGR DATE 7/10/86 FIRM MEMBER (TITLE) SOUTHERN DIVISION DIVISION PDR SHAWENR DIR		SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE FAC. & BLDG 1816 FOUNDATION PLAN ~ NOTES & STRUCTURAL DETAILS	
APPROVED OFFICER IN CHARGE DATE 11-17-86 EPO FOR COMMANDER, NAVFAC		SIZE CODE IDENT NO. F 80091 NAVFAC DRAWING NO. 5071264 CONSTR CONTR NO. W62467-80-C-0086 SPEC OR-80-0086 SHEET 11 OF 25	

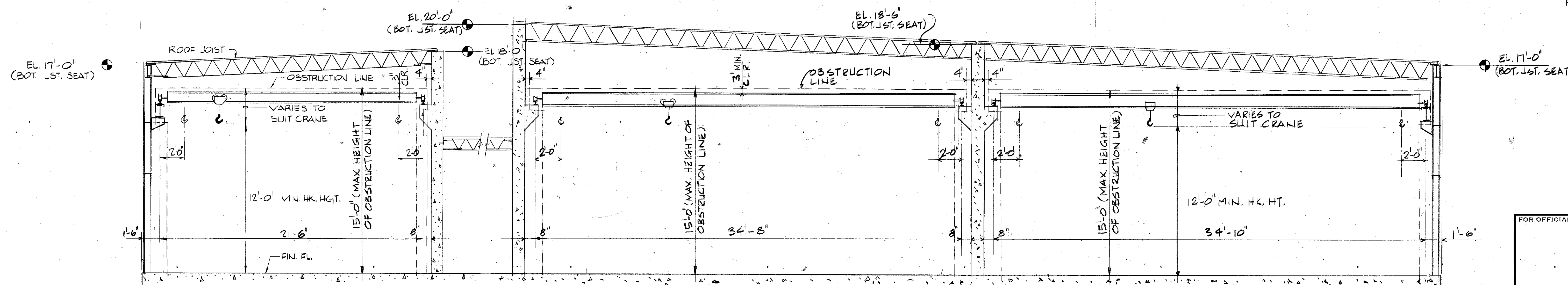
REVISIONS			
LET	DESCRIPTION	PREP'D BY	DATE

SECTION 1
SCALE: 1" = 1'-0" (12/12)SECTION 2
SCALE: 1" = 1'-0" (12/12)SECTION 3
SCALE: 1" = 1'-0" (12/12)SECTION 4
SCALE: 1" = 1'-0" (12/12)

NOTE: DIMENSIONS TO BE 4" PLUS SIDING DEPTH.

ROOF FRAMING PLAN ~ MISSILE ASSEMBLY BLD'G. 1816

1" = 1'-0"

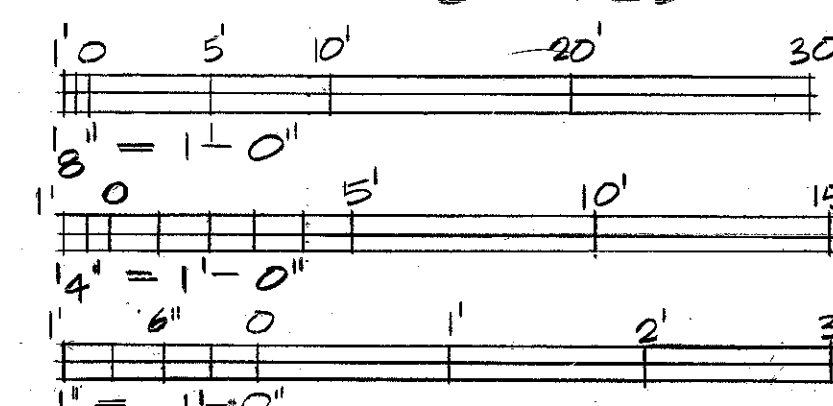


CRANE CLEARANCE SKETCH

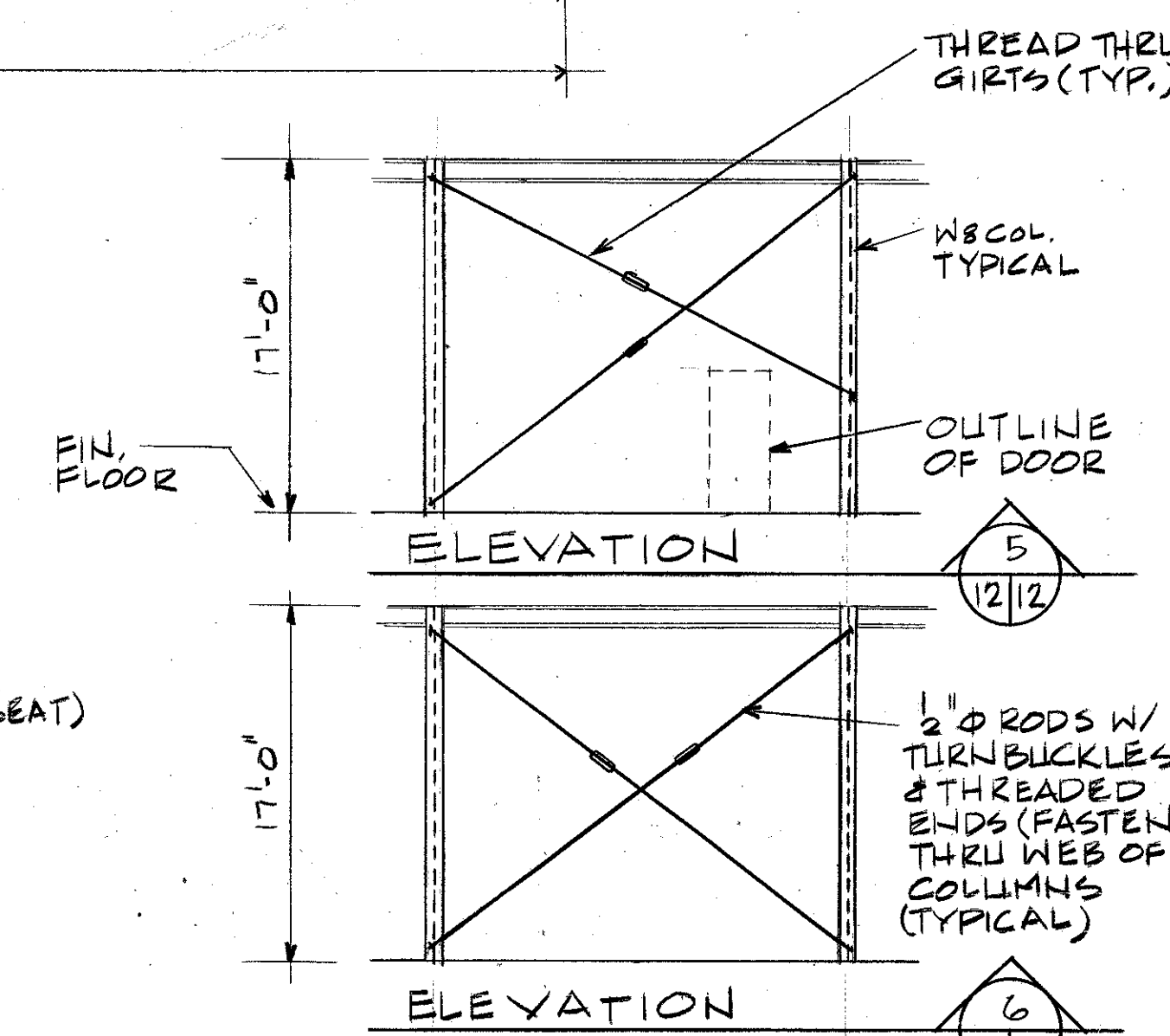
SCALE: 1/4" = 1'-0"

NOTE:
NO LIGHTS, CONDUITS, DUCTS, UNIT HEATERS, PIPING, ETC.
SHALL PROTRUDE DOWN INTO THE INDICATED OBSTRUCTION
LINES.

GRAPHIC SCALES



AS-BUILT

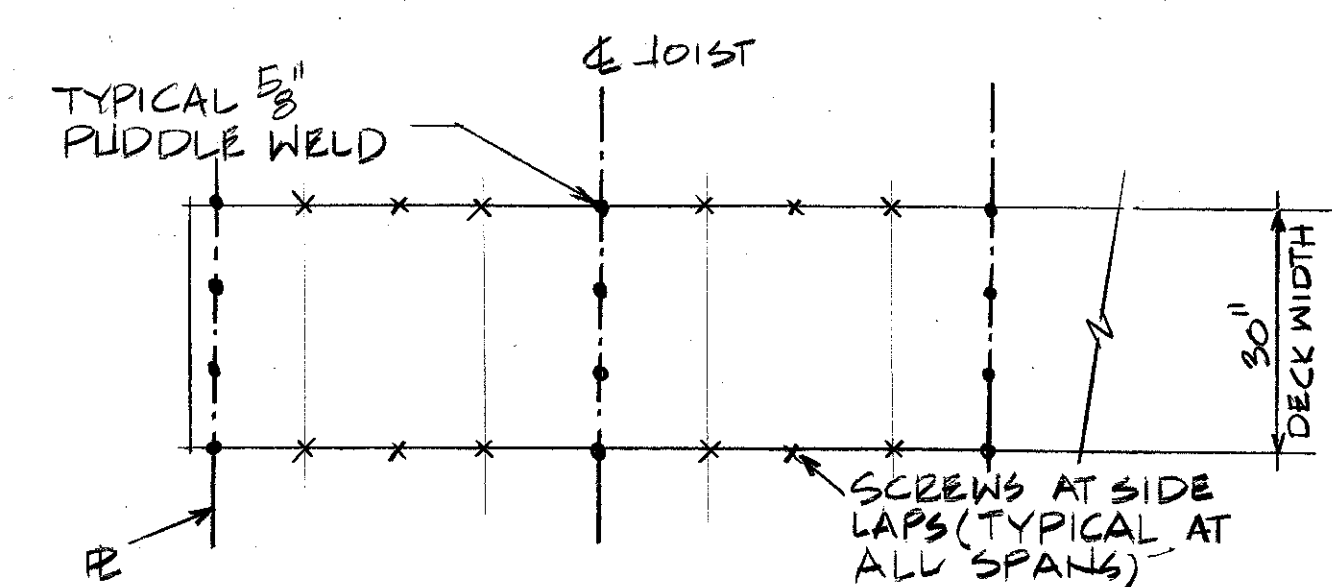


TYPICAL BRACING DETAILS

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DESIGN: COLLINS, DORRIS, MOORE & CHAMBERS SUBMITTED BY: CH ENGR DATE: 9/10/84 FIRST MEMBER (TITLE): SOUTHERN DIV-DESIGN DIVISION PDR: [Signature] DIR		SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE, FAC. & BLDG. 1816 ROOF FRAMING PLAN & STRUCTURAL DETAILS	
APPROVED: [Signature] OFFICER IN CHARGE	DATE: 11-12-84	SIZE: F CODE IDENT NO.: 80091	NAVJAG DRAWING NO.: 5071265
CONSTR. CONTR. NO. W62461-50-C-0046		SHEET 12 OF 25	

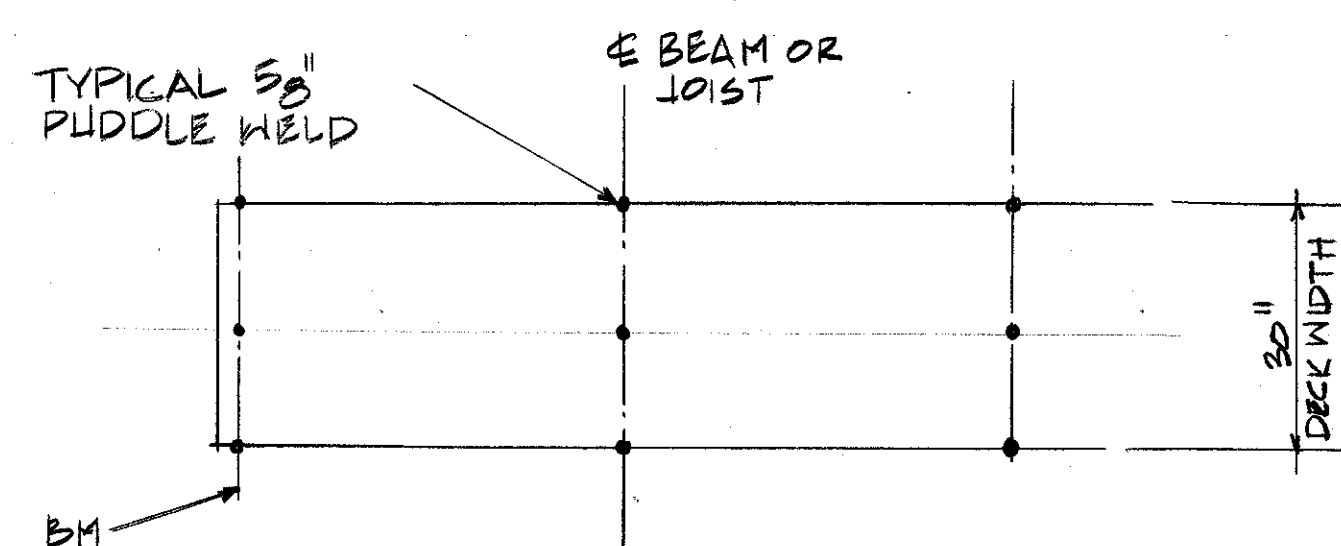
REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED



TYPICAL WELD PATTERN FOR 20 GA. METAL DECK

NOT TO SCALE

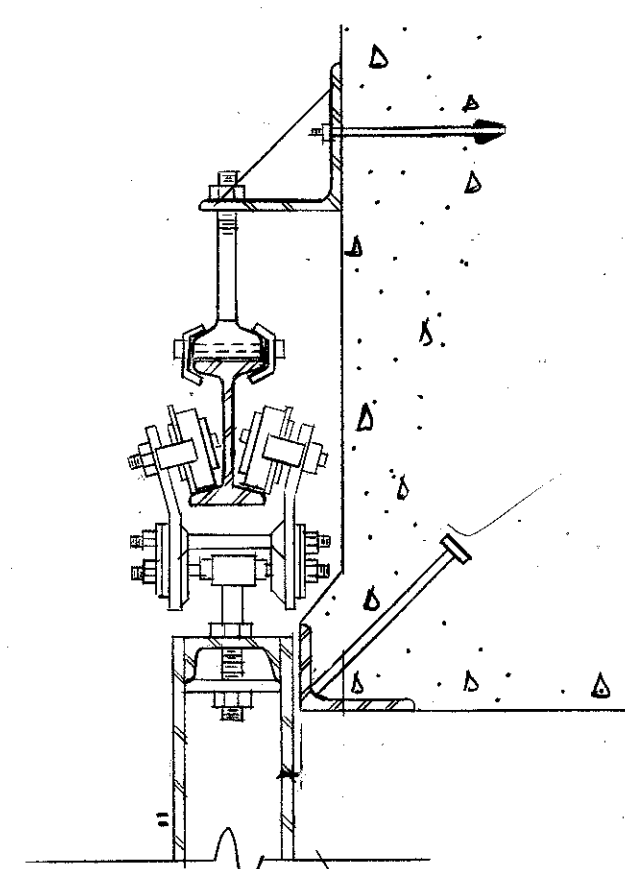
NOTE: 20 GA. TYPICAL OVER LOW ROOF AREA.



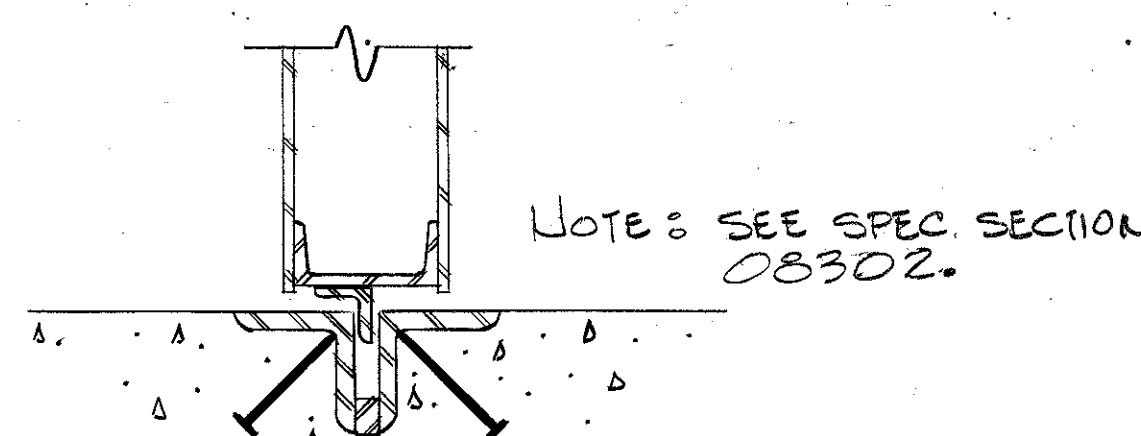
TYPICAL WELD PATTERN FOR 24 GA. METAL DECK

NOT TO SCALE

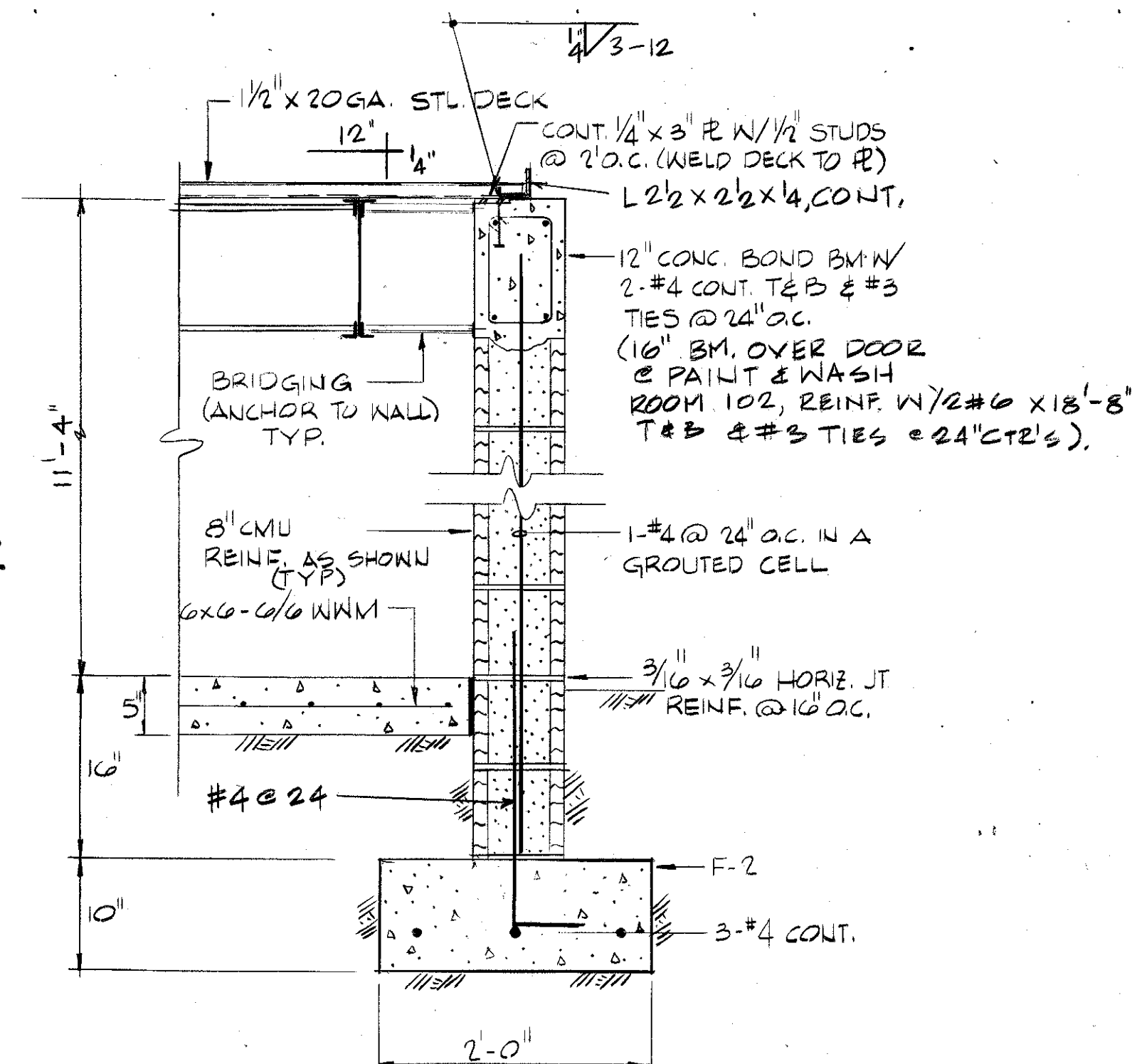
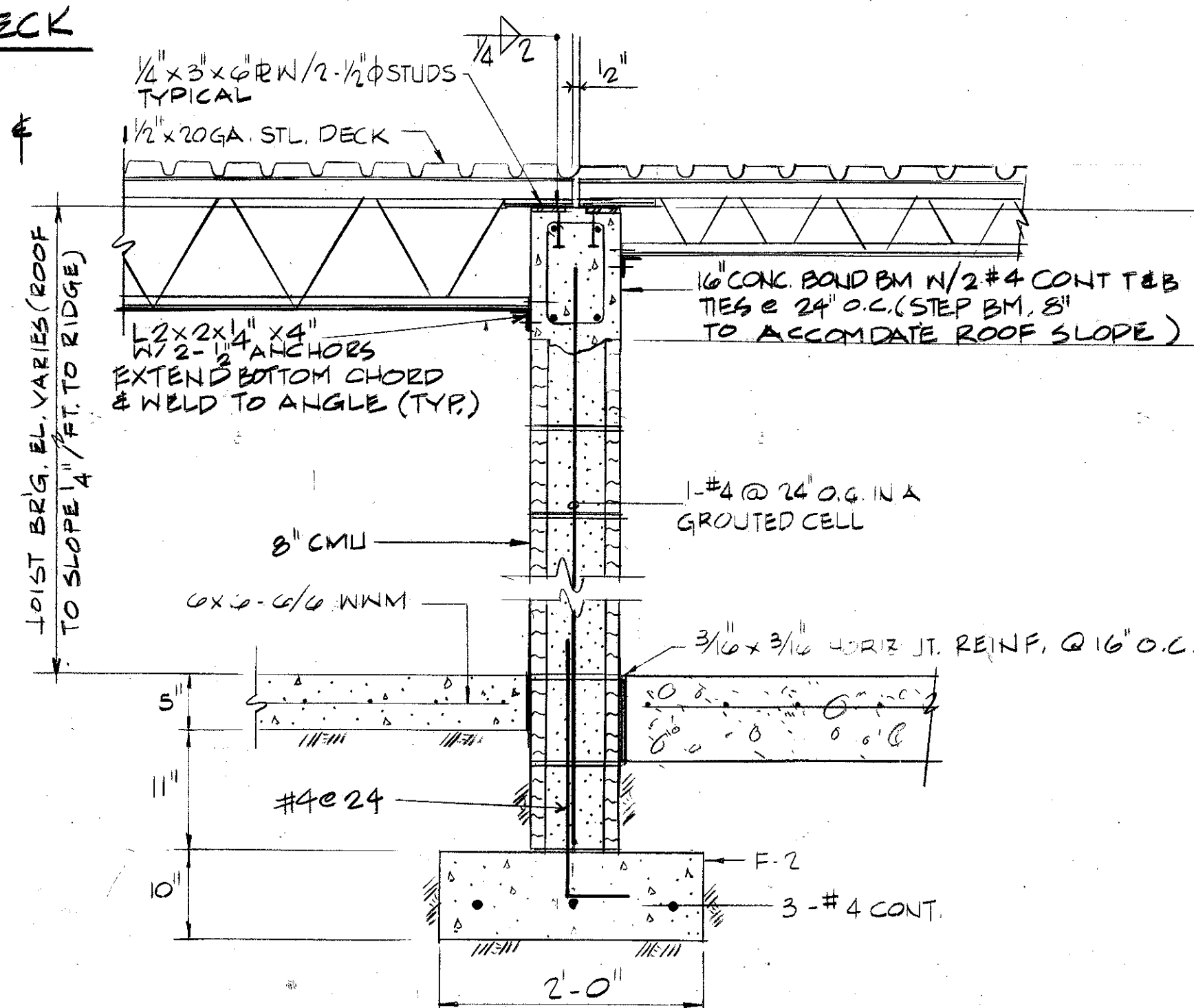
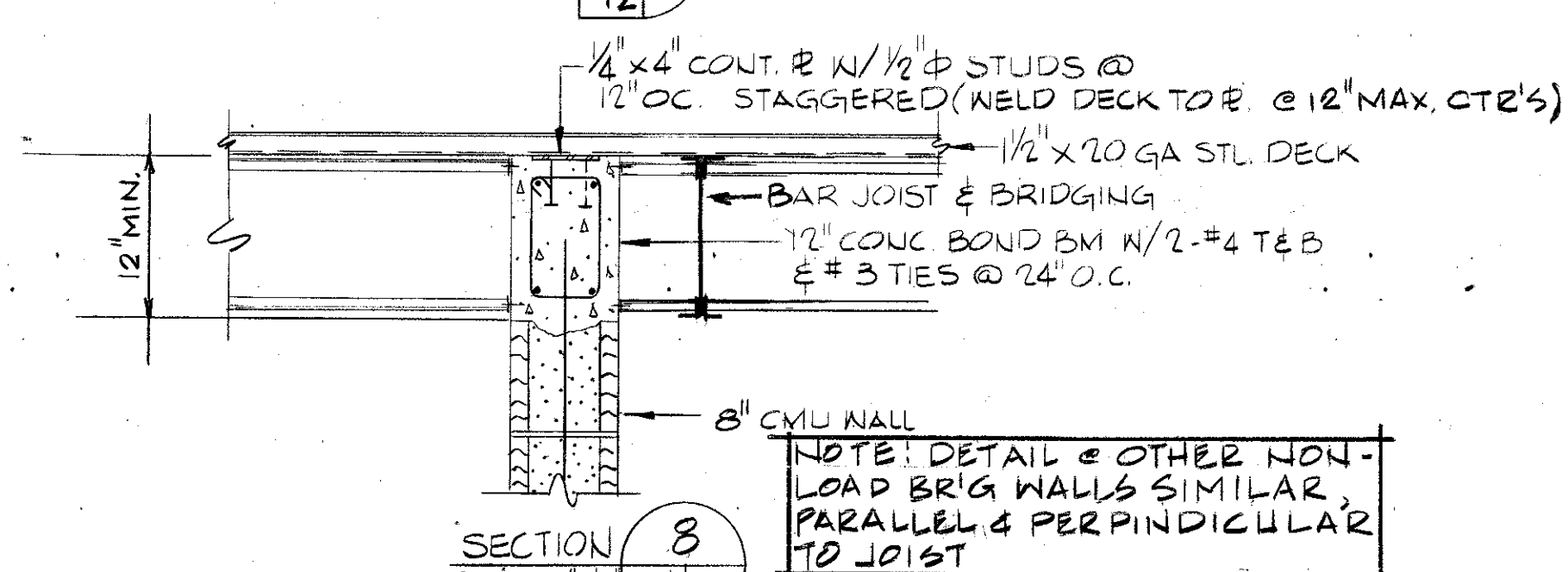
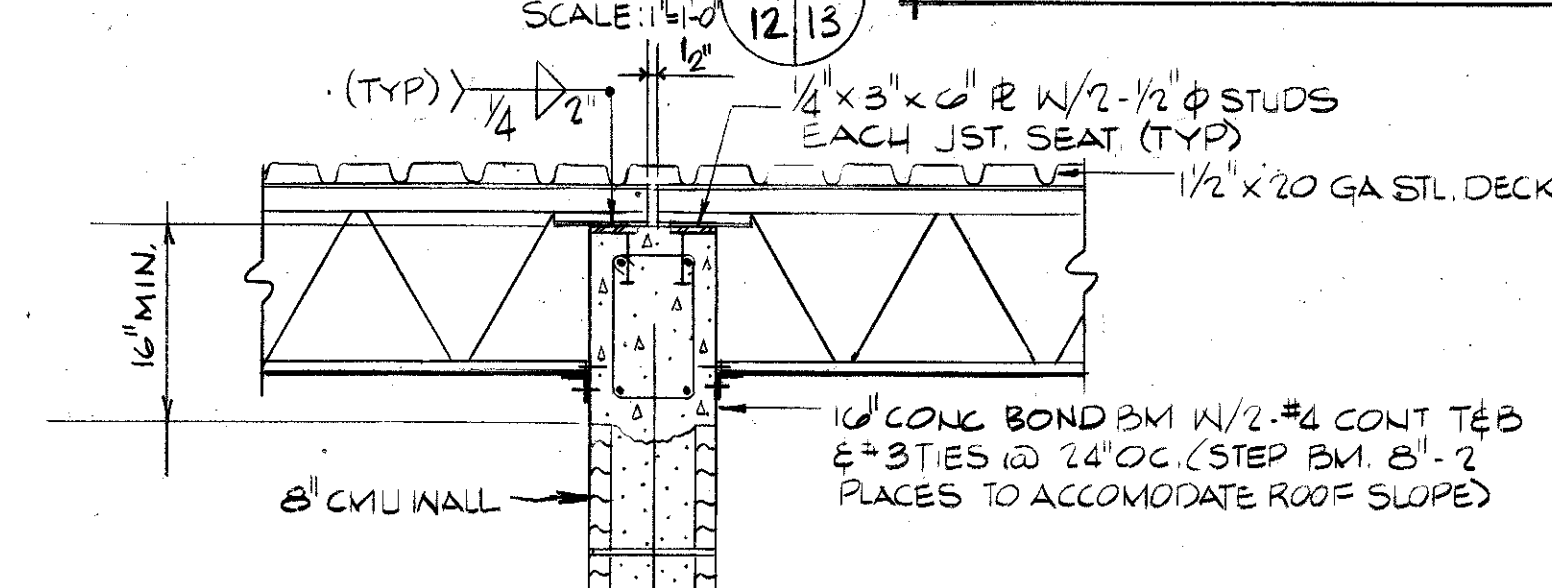
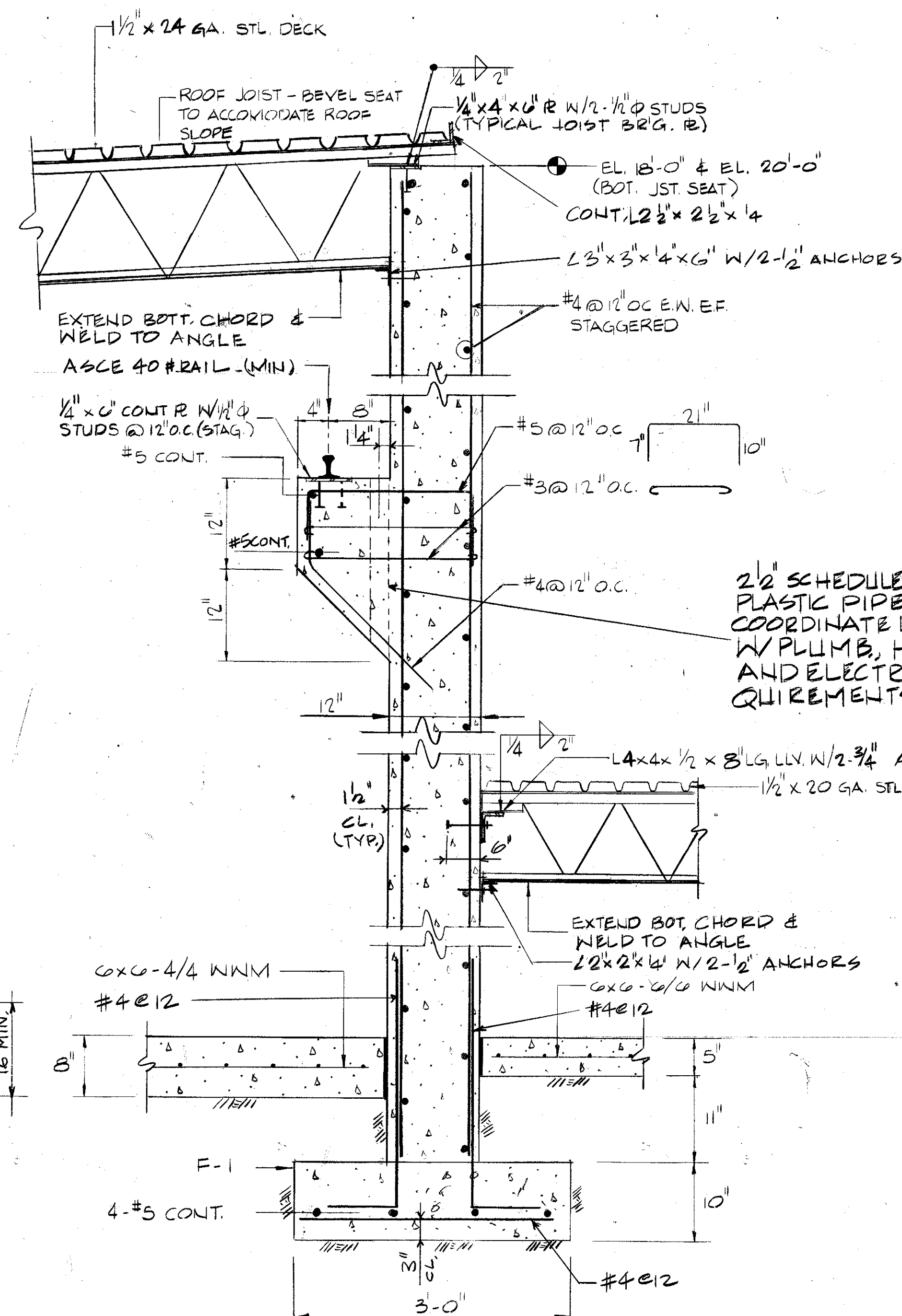
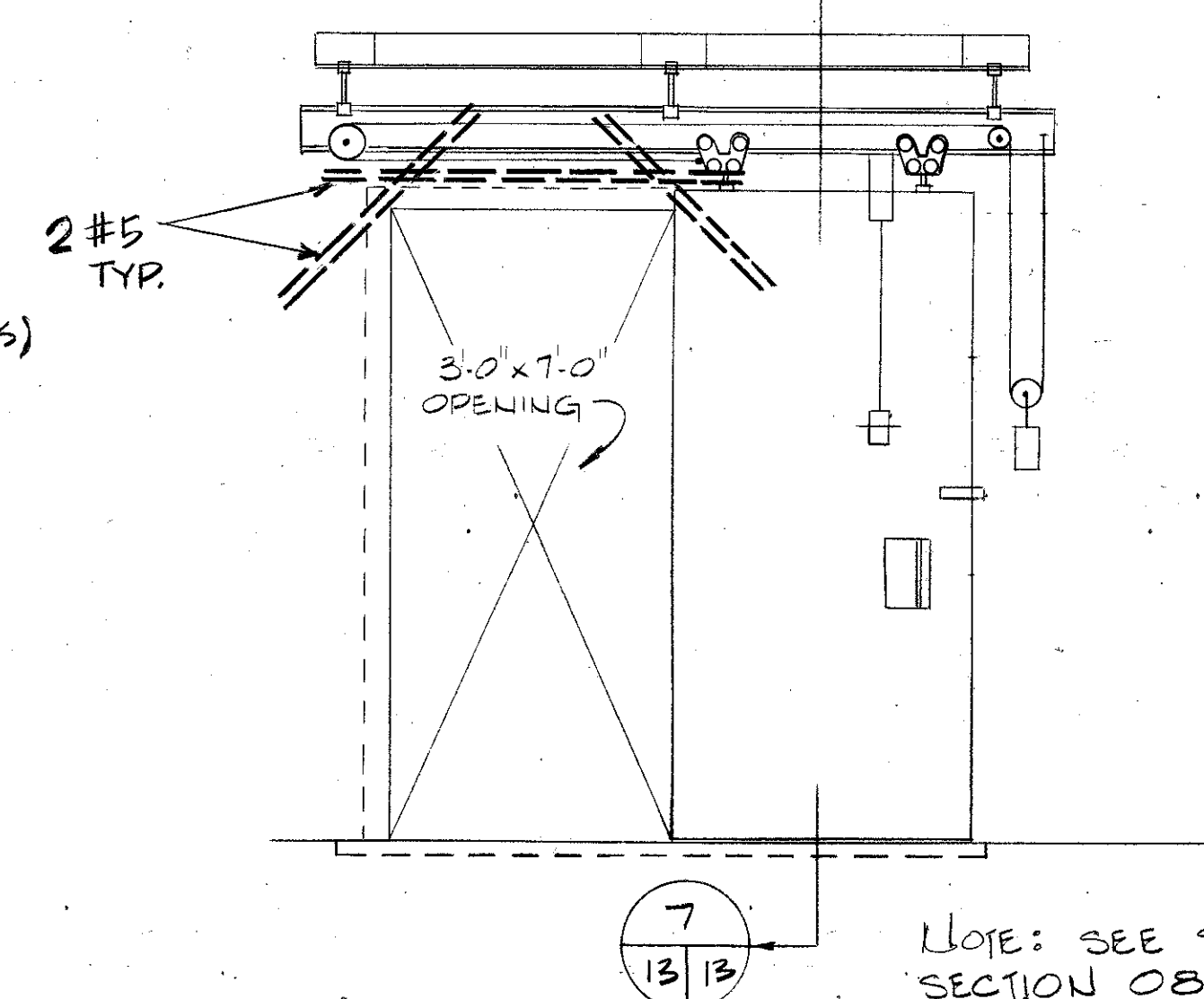
NOTE: 24 GA. TYPICAL OVER (HIGH ROOFS) MAINTENANCE & SHOP AREAS.



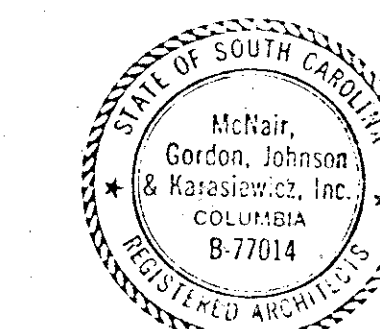
NOTE: SEE SPEC. SECTION 08302

SECTION 6
NO SCALE

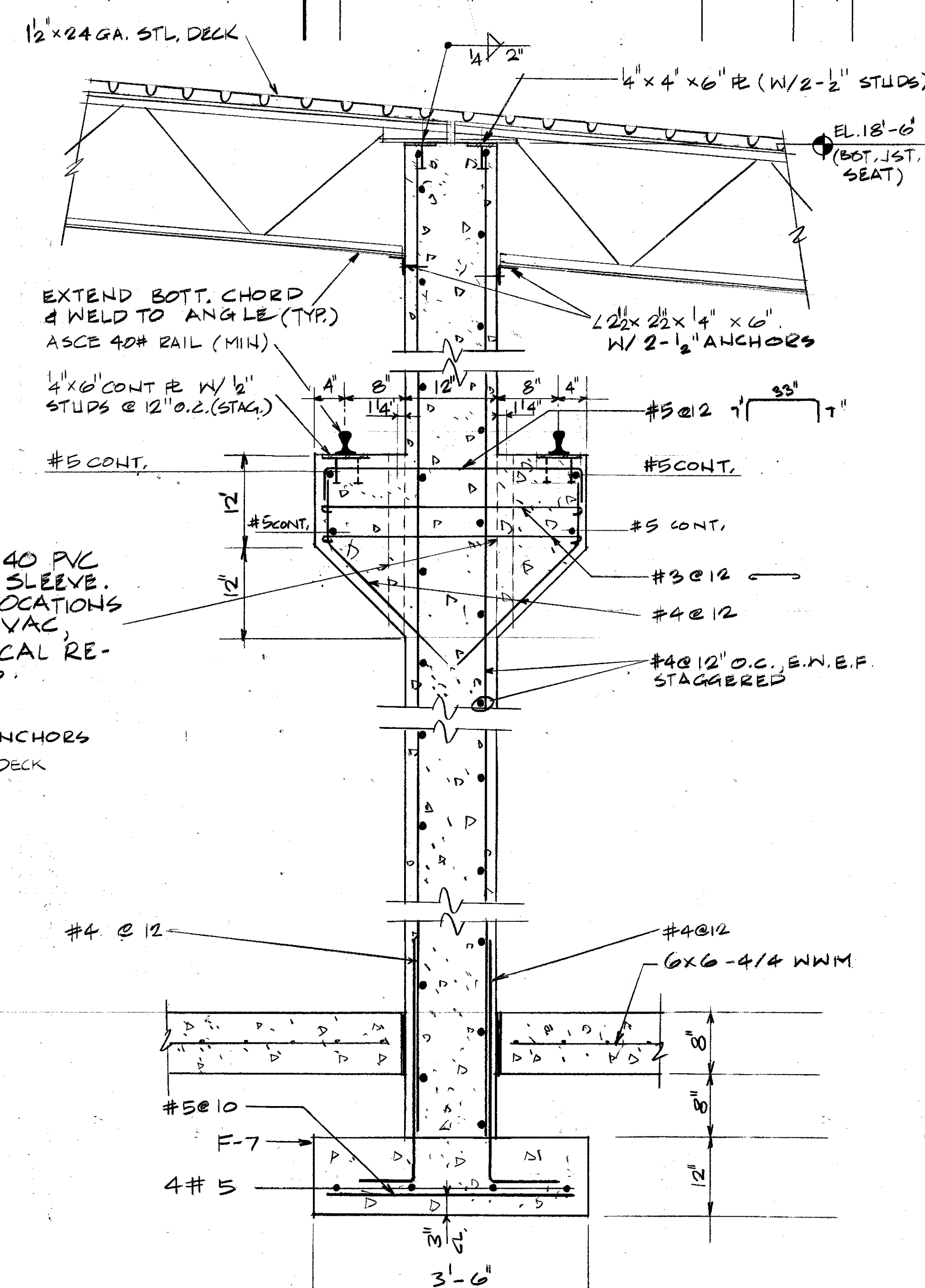
NOTE: SEE SPEC. SECTION 08302

SECTION 7
NO SCALESECTION 1
SCALE: 1\"/>
SECTION 2
SCALE: 1\"/>
SECTION 3
SCALE: 1\"/>
SECTION 4
SCALE: 1\"/>
SECTION 5
SCALE: 1\"/>
TYPICAL BLAST DOOR ELEV. - 4 REQ'D.
NO SCALE

AS-BUILT

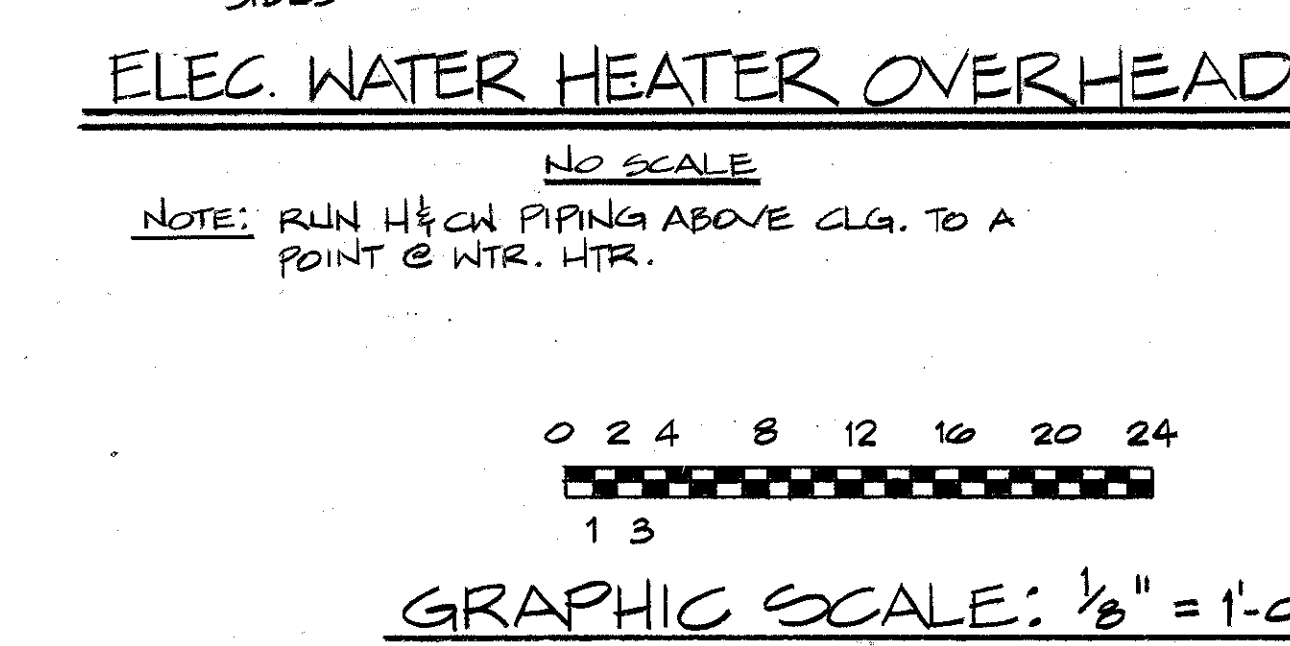
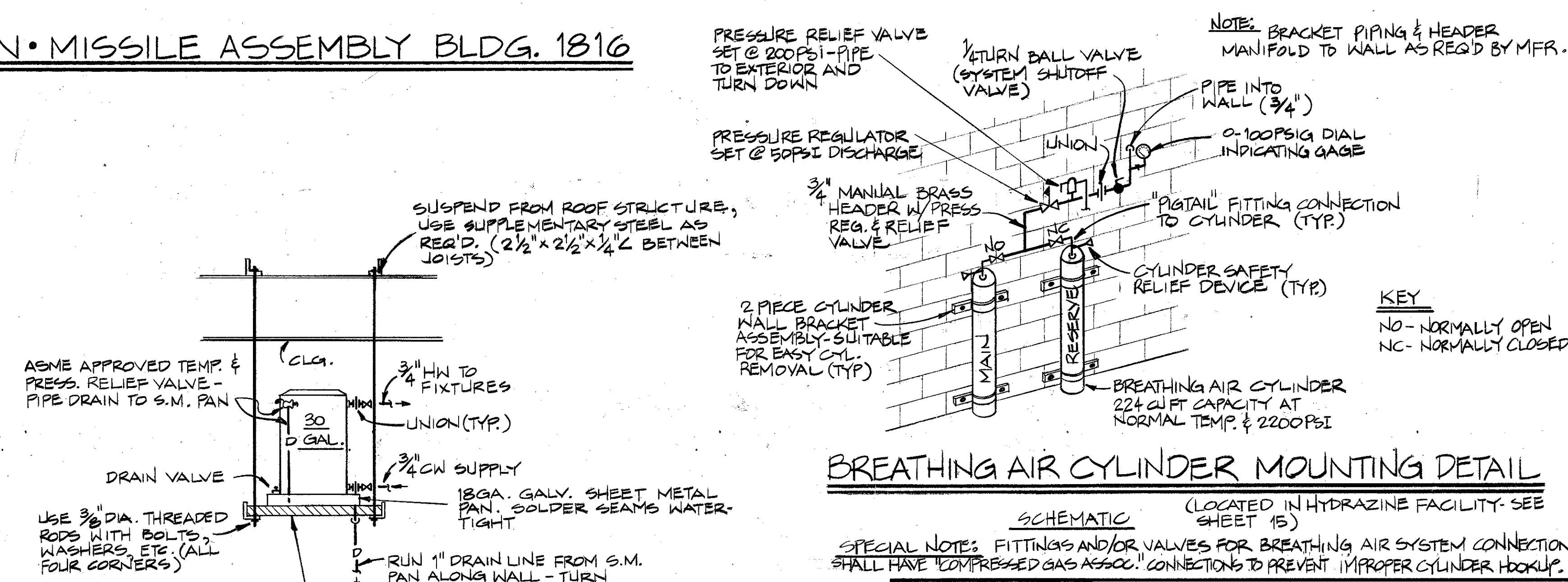
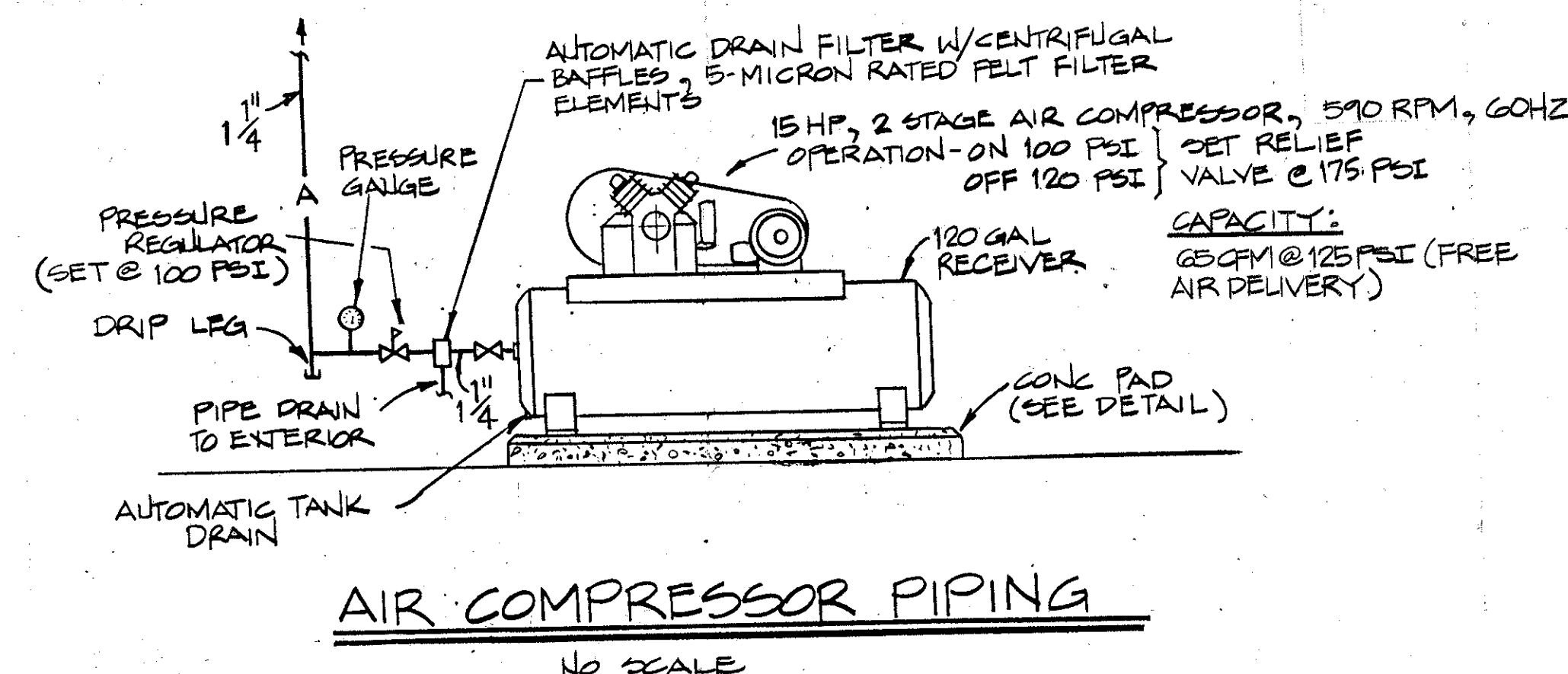
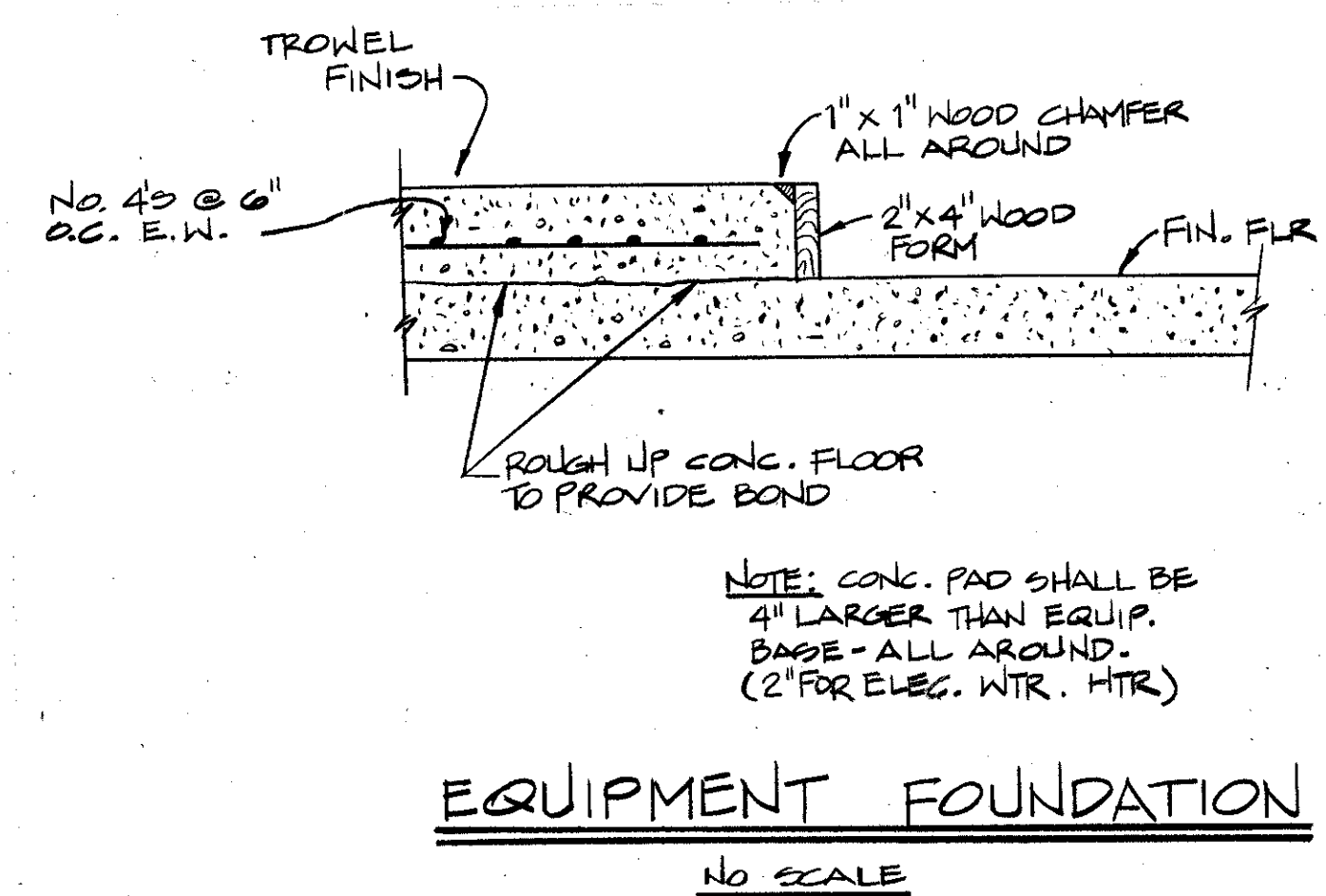
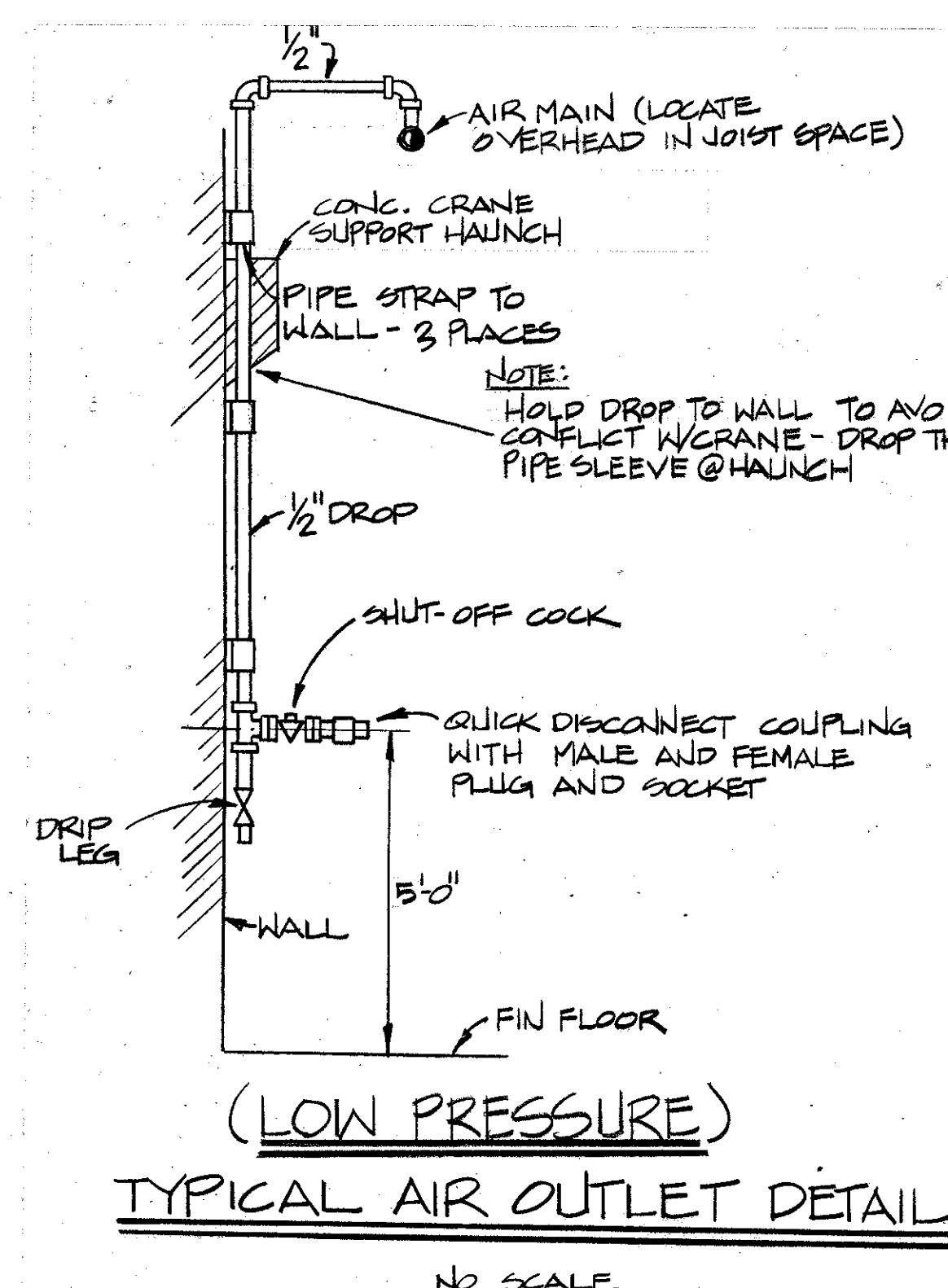
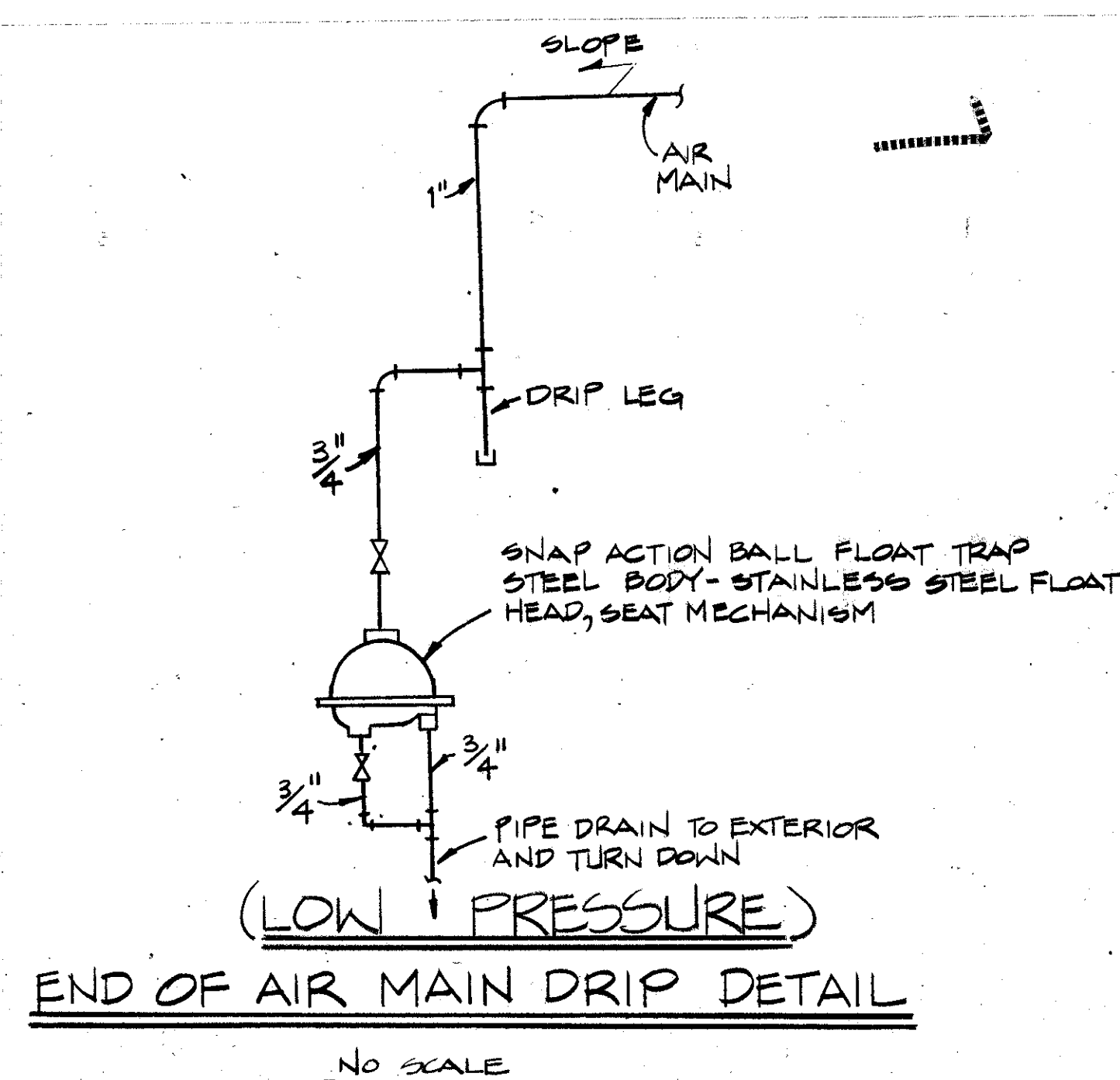
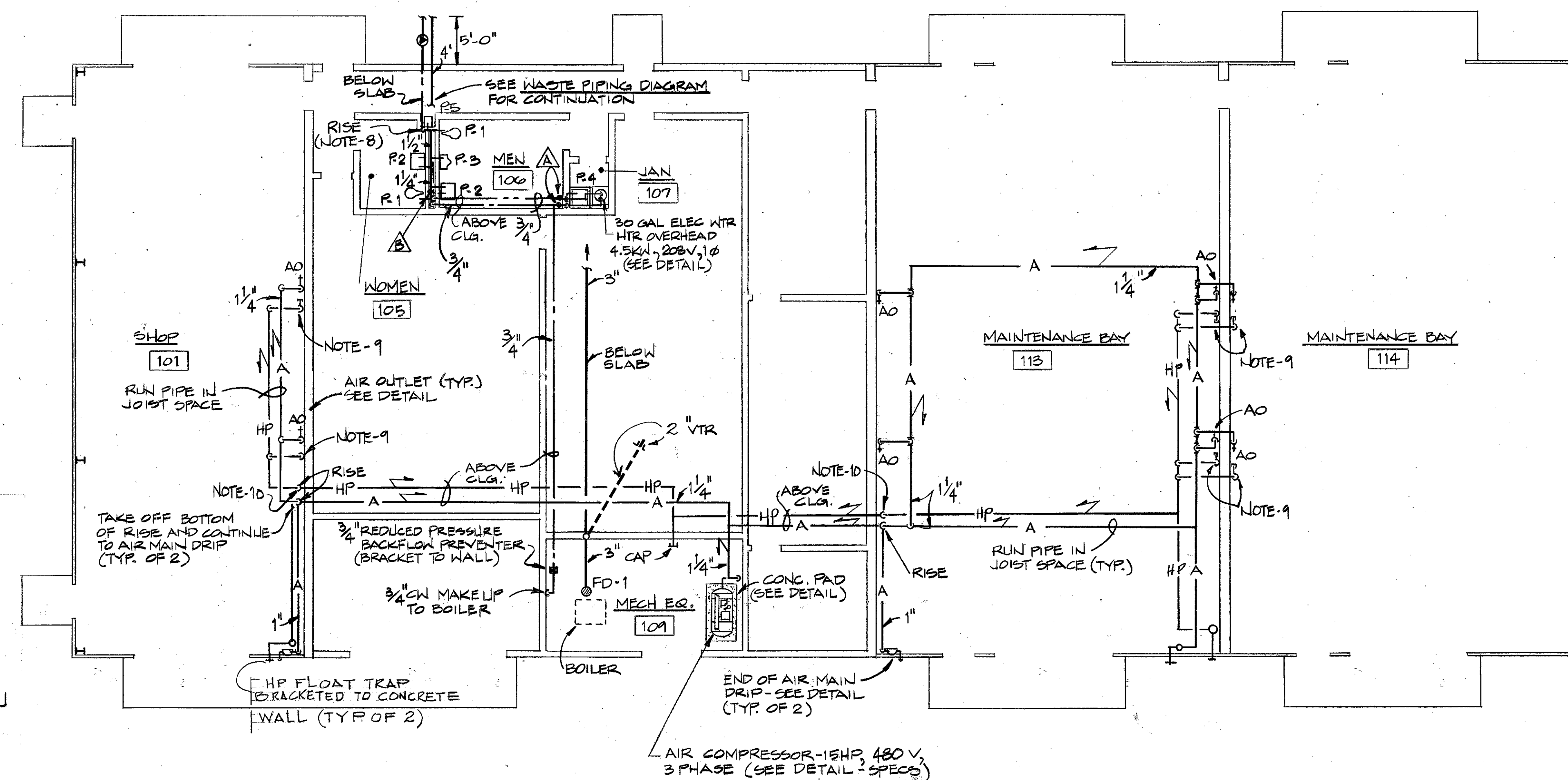
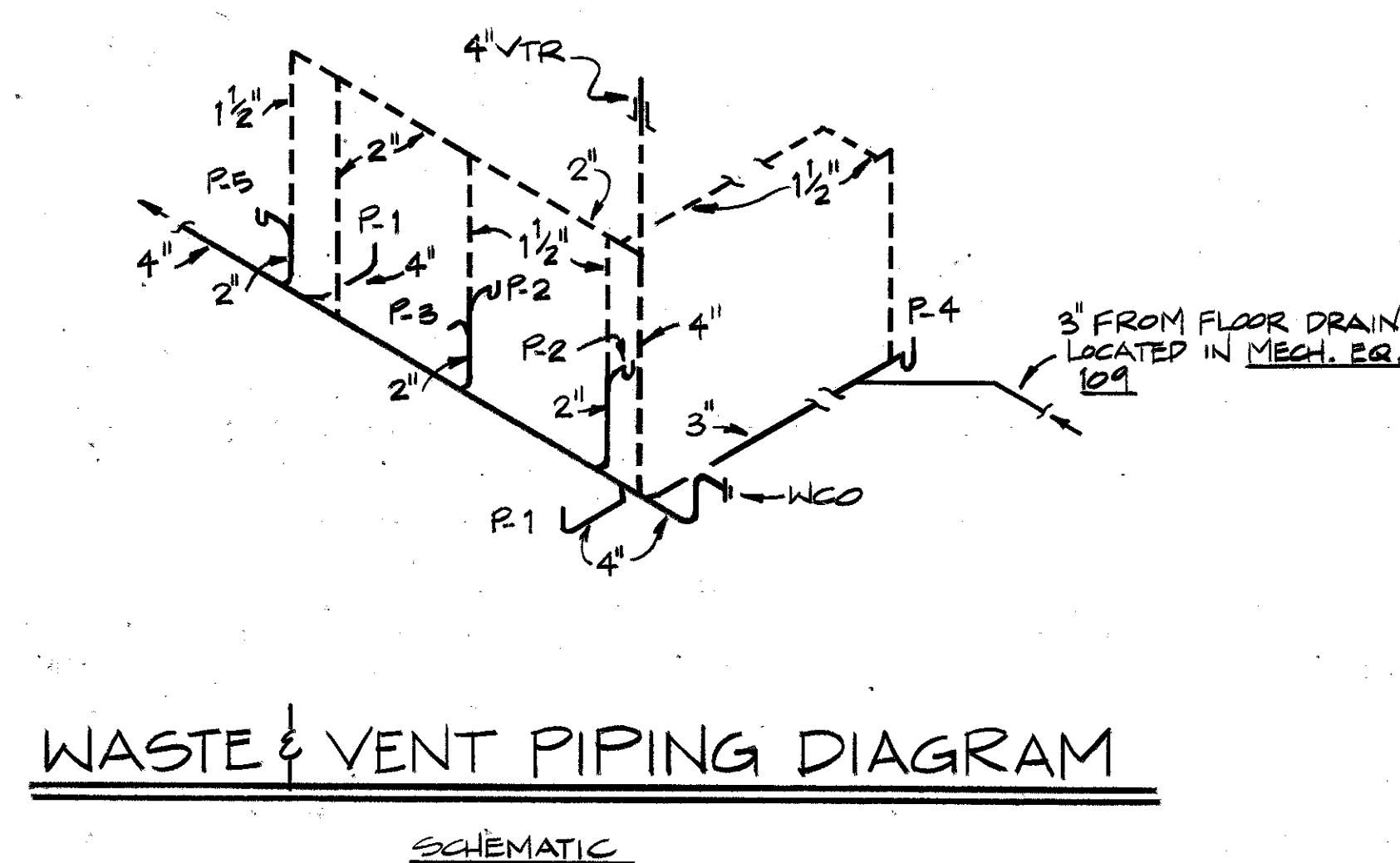


ARCH. & ENGR. SEAL

SECTION 7
SCALE: 1\"/>

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McNEIL, GORDON, JOHNSON & KARASIEWICZ ARCHITECTS - ENGINEERS - PLANNERS P.O. BOX 64 COLUMBIA, S.C. 29202	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.
DESIGN: COLLIER, MOORE, CHK, MABEY SURV: MABEY, CH ENGR SUBMITTED BY: W. R. WILSON FIRM MEMBER (TITLE): SOUTHERN DIV. DESIGN DIVISION PDE: [Signature] DIR	SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE FAC. & BLDG 1816 STRUCTURAL DETAILS
APPROVED: [Signature] DATE: 11/19/80 OFFICER IN CHARGE: [Signature] DATE: 11/19/80 APPROVED: [Signature] DATE: 11/19/80 RFD FOR COMMANDER, NAVFAC	SIZE: F CODE IDENT. NO.: 80091 NAVFAC DRAWING NO.: 5071266 CONSTR CONTR NO.: N62467-80-C-0026 SCALE: AS NOTED SHEET 13 OF 25

REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVE



 State of South Carolina Arch. & Engr. Seal McNair, Gordon Johnson S. Registration, Inc. COLUMBIA 0-77014 REGISTERED ARCHITECT	MCNAIR, GORDON JOHNSON & KARASEWICZ ARCHITECTS - ENGINEERS - PLANNERS P.O. BOX 66 COLUMBIA, SC 29202		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
	DSDN <u>1816 PLUMBING</u> CM ENGR <u>1816</u>		SHAW AIR FORCE BASE SOUTH CAROLINA	
	SUPV <u>1816</u>		HYDRAZINE FAC. & BLDG 1816	
	SUBMITTED BY <u>G. Johnson</u> DATE <u>9/10/82</u> (SIGN REVERSER TITLE)		BLDG 1816 PLUMBING FLOOR PLAN, DETAILS	
	SOUTHERN DIST - DESIGN DIVISION PDS <u>1816</u> DIR			

SYMBOLS

—	SANITARY WASTE PIPING
- - -	SAN. VENT PIPING
- P -	DRAIN PIPING FOR AREA 105 & 106 (PE)
- A -	COMPRESSED AIR PIPING
- F -	FIRE MAIN PIPING
- - -	DEM. COLD WATER PIPING (CW)
- - -	DEM. HOT WATER PIPING (HW)
- - -	PITCH PIPE IN DIRECTION OF ARROW (NOTE-7)
4 HB	HOSE BIBBS
FD-1	FLOOR DRAIN - CI BODY
AO	AIR OUTLET - SEE AIR OUTLET DETAIL
FD-2	PE FLOOR DRAIN WITH PRIMER CONNECTION
VTR	VENT THRU ROOF
- P -	VENT PIPING FOR AREA 105 & 106 (PE)
—	STOP VALVE IN CI BOX
(A)	4" SPRINKLER ALARM VALVE & PRESSURE SWITCH
•	WATER HAMMER ARRESTOR & SIZE DESIGNATION
EAH	ELECTRIC WATER HEATER
WCO	WALL CLEANOUT
BA	BREATHING AIR PIPING
HP	3000 PSI HIGH PRESSURE COMP. AIR

PLUMBING NOTES

- DO NOT SCALE PLANS. ROUGH FROM ARCHITECTURAL & EQUIPMENT MANUFACTURER'S DRAWINGS.
- RUN HOT AND COLD NTR. PIPING BELOW COUNTER ALONG WALL.
- UNLESS OTHERWISE SHOWN OR NOTED ALL HW, WASTE AND VENT PIPING SHALL BE RUN CONCEALED IN WALLS AND/OR PARTITIONS.
- LOCATE TRAP PRIMER PANEL 24" ABOVE FIN. FLR. TO PROVIDE EASY ACCESS.
- ALL HOSE BIBBS, FAUCETS WITH HOSE THREAD ENDS SHALL BE EQUIPPED WITH AN APPROVED ANTI-SIPHON DEVICE (VACUUM BREAKER).
- COORDINATE WORK CLOSELY WITH ALL WORK DONE UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID INTERFERENCE AND CONFLICT.
- PITCH ALL COMPRESSED AIR PIPING IN DIRECTION OF ARROW AS SHOWN ON DRAWING TO FACILITATE DRAINAGE OF SYSTEM.
- LOCATE SIZE "C" WATER HAMMER ARRESTOR @ TOP OF CW RISE IN BUILDING. SEE SPECS.
- PROVIDE VALVE AND ADAPTER IN 3000PSI PIPING MTD. 5'-0" ABOVE FIN. FLR. (TYP. OF 2 LOCATIONS FOR EA BAY. SEE LOW PRESS. AIR OUTLET DETAIL FOR PIPING DROPS @ CONC. CRANE SUPPORT).
- RUN DRAIN LINE FROM LOW POINT TO AUTOMATIC FLOAT TRAP AND DRAIN FOR 3000 PSI PIPING. LOCATE ADJACENT TO LOW PRESS. AIR AS SHOWN. PIPING ARRANGEMENT TYP. TO LOW PRESS. SYS.

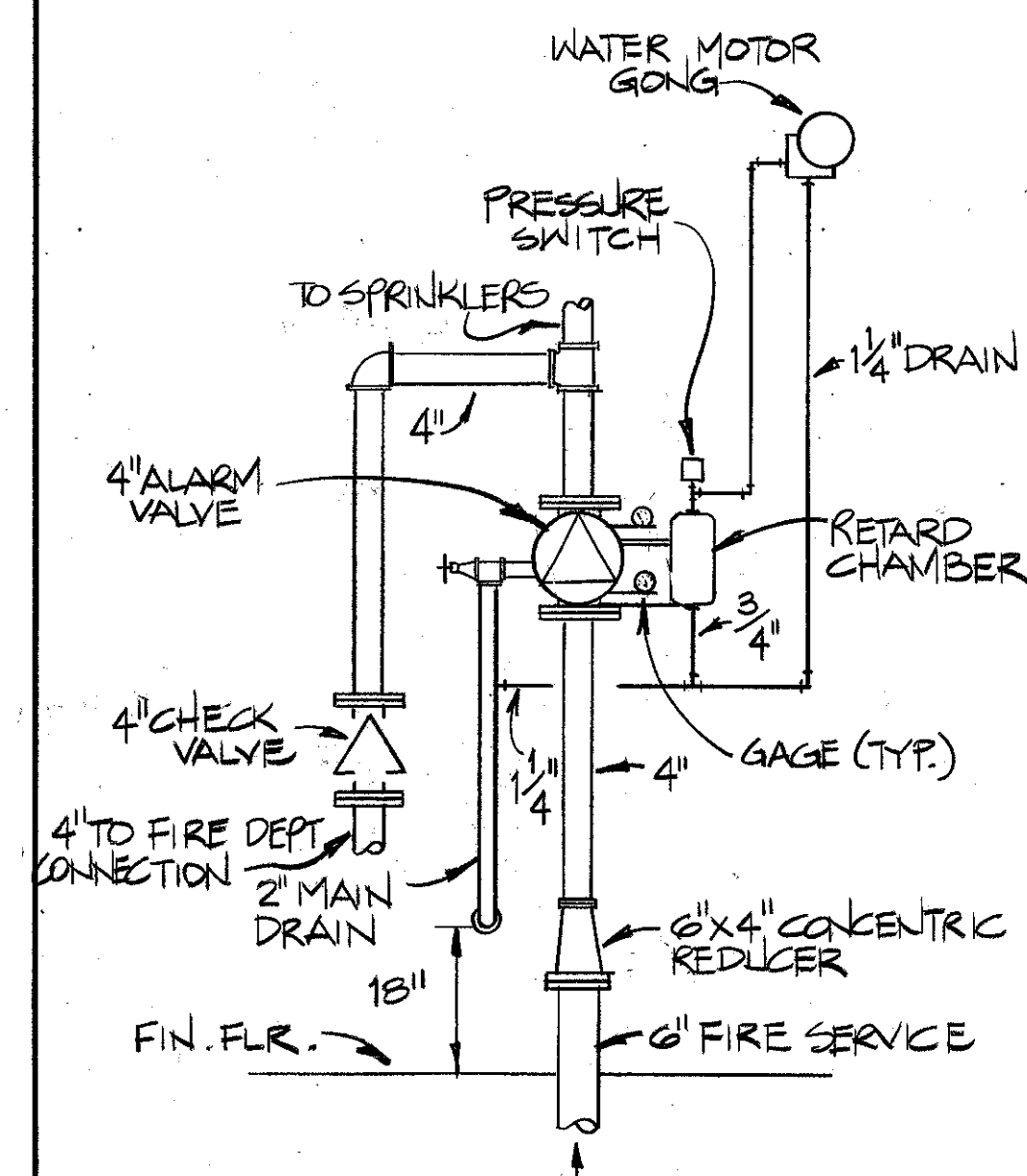
PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	HW	CW	WASTE	VENT
P-1	WATER CLOSET, FLUSH VALVE	—	1 1/2"	4"	2"
P-2	LAVATORY, WALL HUNG	1/2"	1/2"	2"	1 1/2"
P-3	URINAL, WALL HUNG	1/2"	2"	1 1/2"	—
P-4	JANITOR'S RECEPTOR	3/4"	3/4"	3"	1 1/2"
P-5	ELEC. WATER COOLER	1/2"	1/2"	2"	1 1/2"
P-6	SINK, COUNTER TOP	1/2"	1/2"	2"	1 1/2"
P-7	DRINKING FOUNTAIN	1/2"	1/2"	2"	1 1/2"
P-8	SERVICE SINK, TRAP STANDARD	3/4"	3/4"	3"	1 1/2"
P-9	SHOWER FITTING	3/4"	3/4"	FD	—
P-10	EMERGENCY SHOWER & EYEWASH	—	1"	2"	1 1/2"
* P-11	EMERGENCY SHOWER (EXTERIOR)	—	1"	—	—

* SEE EMERGENCY SHOWER DETAIL FOR INSTALLATION OF FREEZELESS UNIT AT EXTERIOR OF BLDG. (TYP. OF 2)

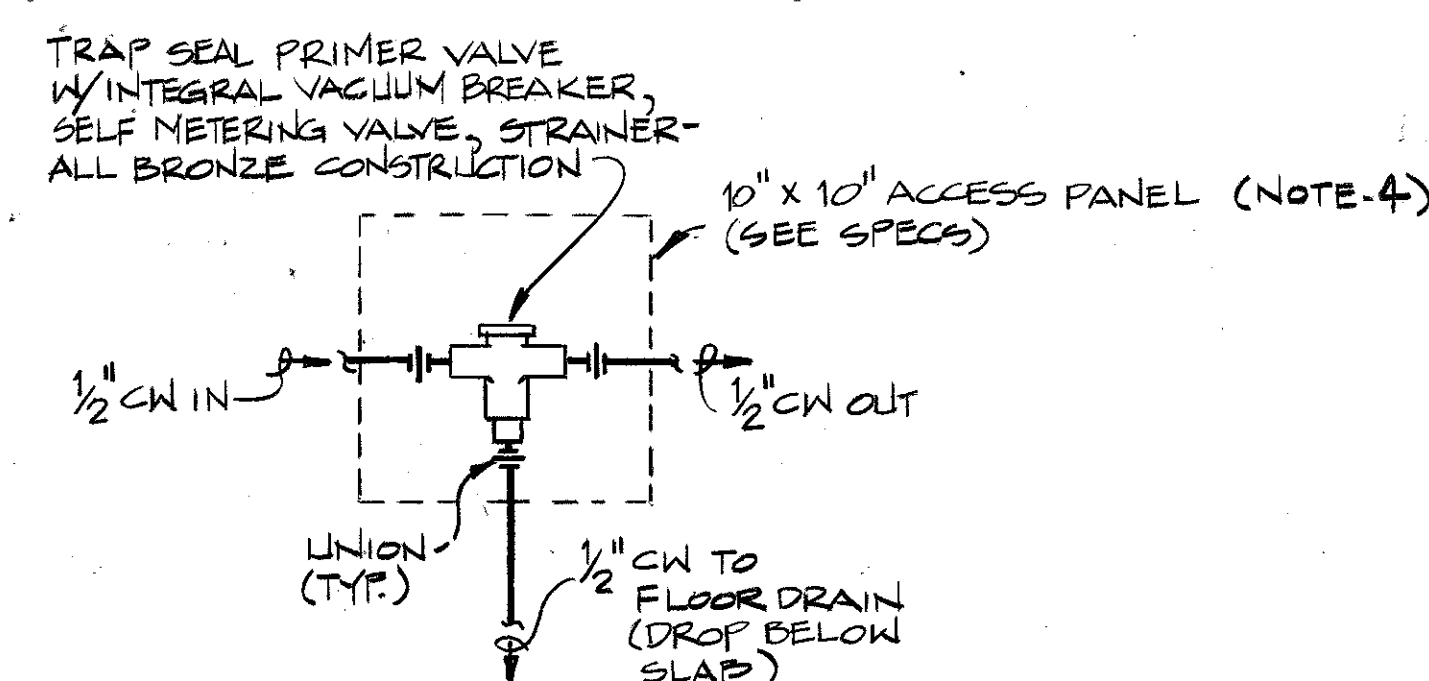
FIRE PROTECTION NOTES

- SYSTEM DESIGN BASED ON EXTRA HAZARD REQUIREMENTS. (NET PIPE SYSTEM)
- PROVIDE DRY SIDEWALL HEADS FOR SPACE 106. MINIMUM OF 3" MOUNT ON WALL PER NFPA REQUIREMENTS FOR UNHEATED AREAS.
- PROVIDE UPRIGHT TYPE HEADS FOR SPACE 105.
- PROVIDE PENDANT TYPE HEADS FOR ALL REMAINING SPACES.



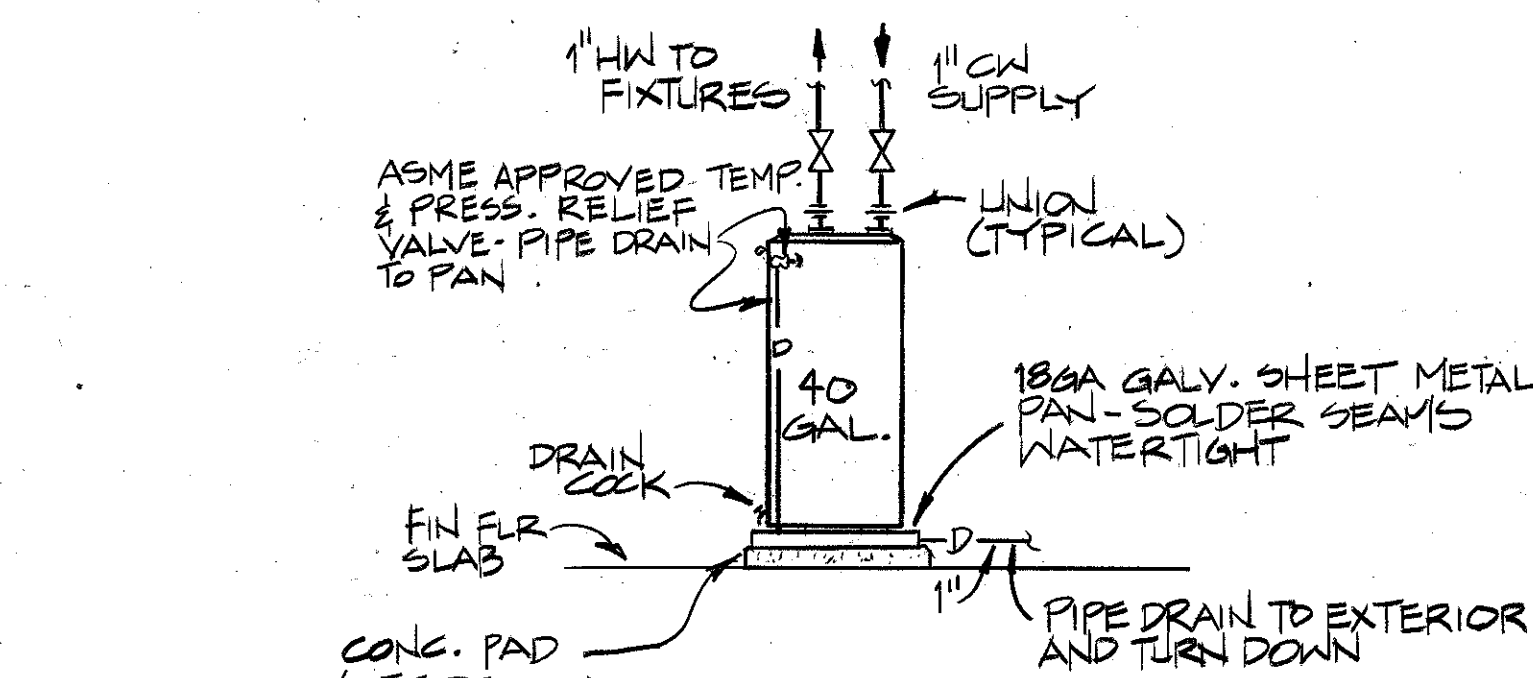
SPRINKLER RISER DETAIL

SCHEMATIC



TRAP PRIMER CONNECTION DETAIL

NO SCALE



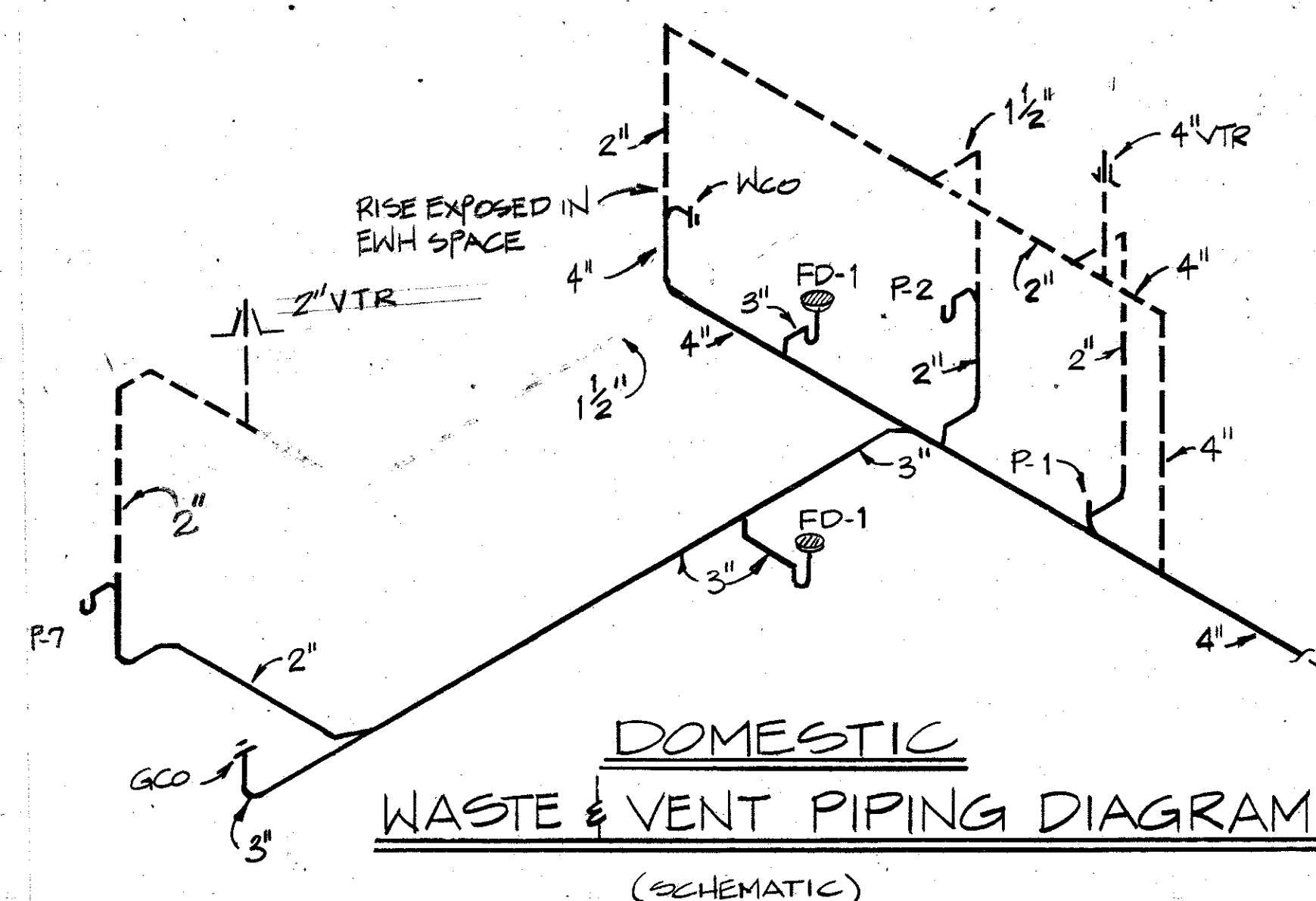
ELECTRIC WATER HEATER DETAIL

NO SCALE

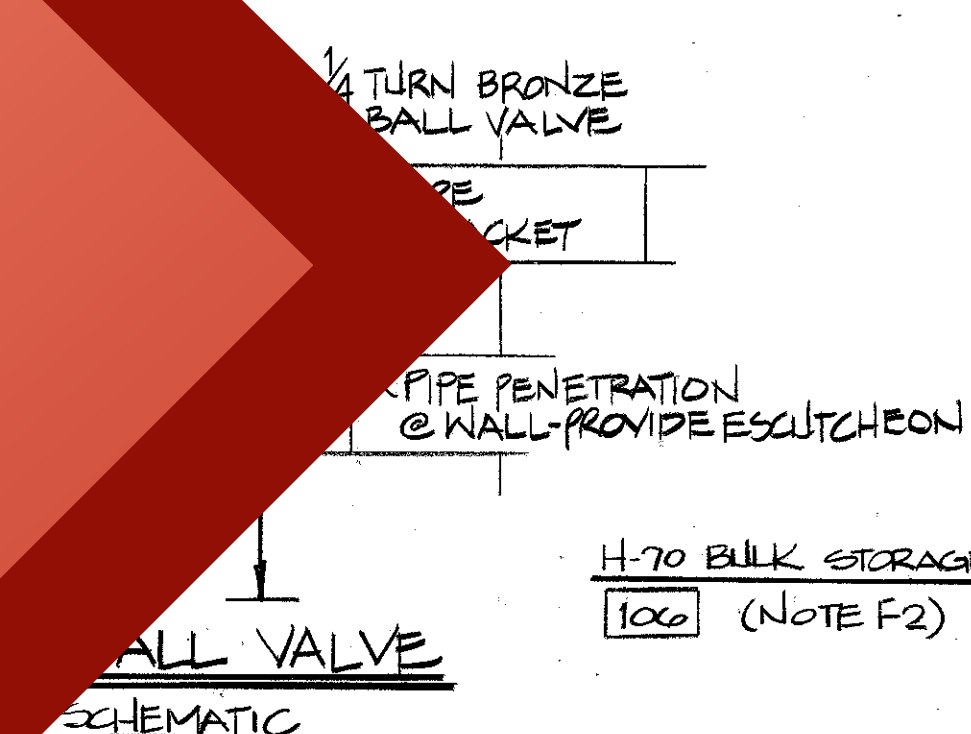
NOTE: INSTALL WATER HEATER TO PERMIT EASY ACCESS TO VALVES, UNIONS, ETC.

BREATHING AIR SYSTEM FLOOR PLAN

BLDG. SCALE: 1/4" = 1'-0"



DOMESTIC WASTE & VENT PIPING DIAGRAM (SCHEMATIC)



EMERGENCY SHOWER (P-11) DETAIL

NO SCALE

0 1 2 3 4 5 6 7 8 9 10 11 12

GRAPHIC SCALE: 1/4" = 1'-0"

AS-BUILT

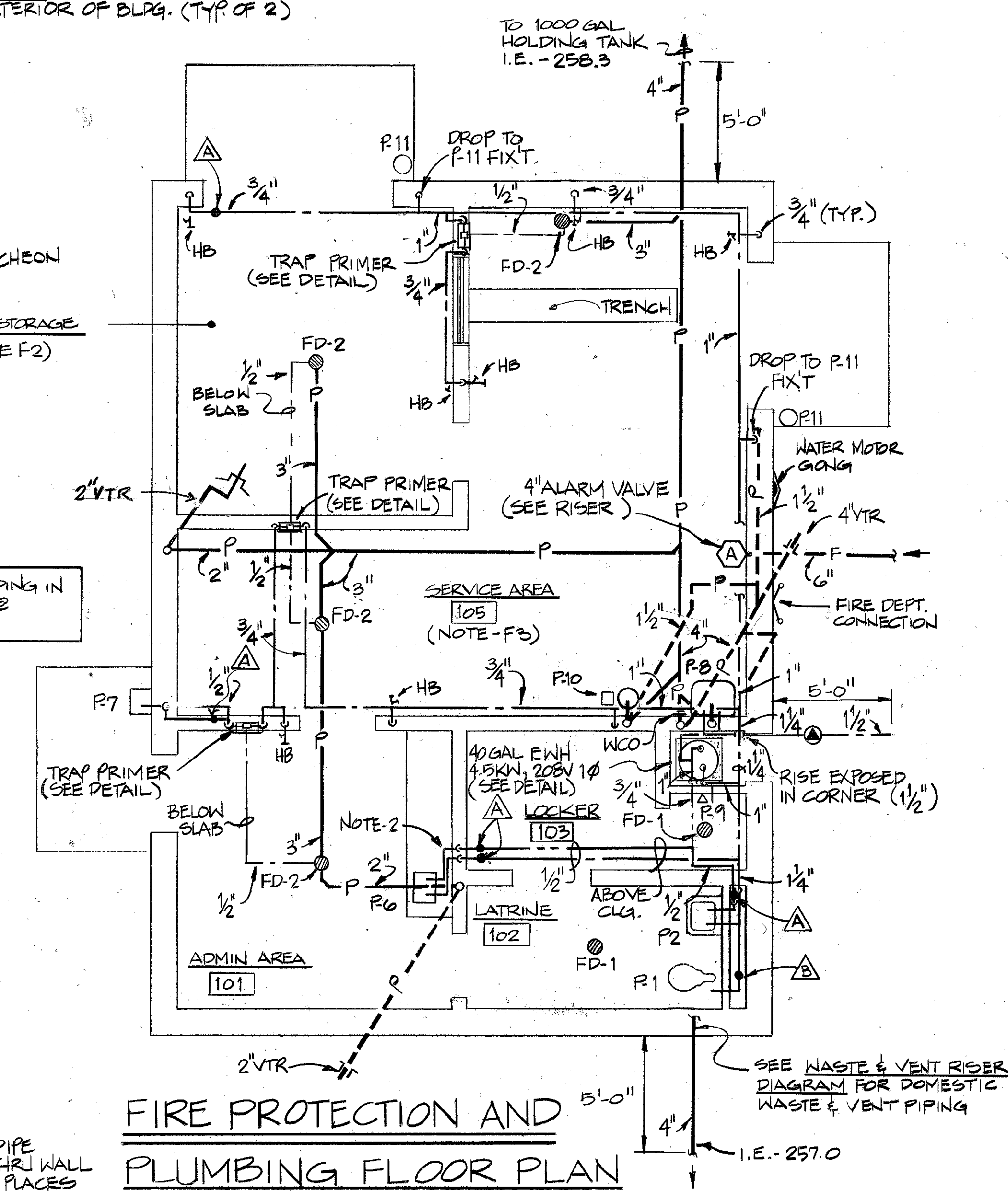
ARCH. & ENGR. SEAL

TRUE NORTH

BUILDING NORTH

FIRE PROTECTION AND PLUMBING FLOOR PLAN

BLDG. SCALE: 1/4" = 1'-0"



SEE WASTE & VENT RISER DIAGRAM FOR DOMESTIC WASTE & VENT PIPING

I.E. - 257.0

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SUBMITTED BY: CH ENGR. M. J. McNAIR DATE: 7/10/80 FIRM MEMBER TITLE: SOUTHERN DIV. DESIGN DIVISION P.E. [Signature] DIR.		SHAW AIR FORCE BASE SOUTH CAROLINA 1619 HYDRAZINE FAC. 8 BLDG. 1816 HYDRAZINE FACILITY PLUMBING/FIRE PROTECTION PLAN, DETAILS, SCHEDULES	
APPROVED: [Signature] OFFICER IN CHARGE DATE: 1/12/86 EFD FOR COMMANDER, NAVFAC	SIZE: 80091 NAVFAC DRAWING NO.: 5071268 CONSTR. CONTR. NO.: 1162467-80-C-0026 SCALE: AS NOTED	SHEET 15 OF 25	

ROOF TOP HEAT PUMP UNIT SCHEDULE																
MARK	TYPE	CFM	ESP	HP	VOLTS/PHASE	COOL MBH**		ENT AIR		CONDENSER		COMP KW	REVERSE CYCLE HEAT @25°F	O.A CFM	STRIP HEAT	
						TOT	SEN	*FDB	*FWB	EAT	FWJ HP				KW	KW
RTL-1	HEAT PUMP	2400	.35	1	208/3	59	46	80	67	95	1/2	8.8	40MBH	2925	20	1

**** LOCK OUT COOLING**

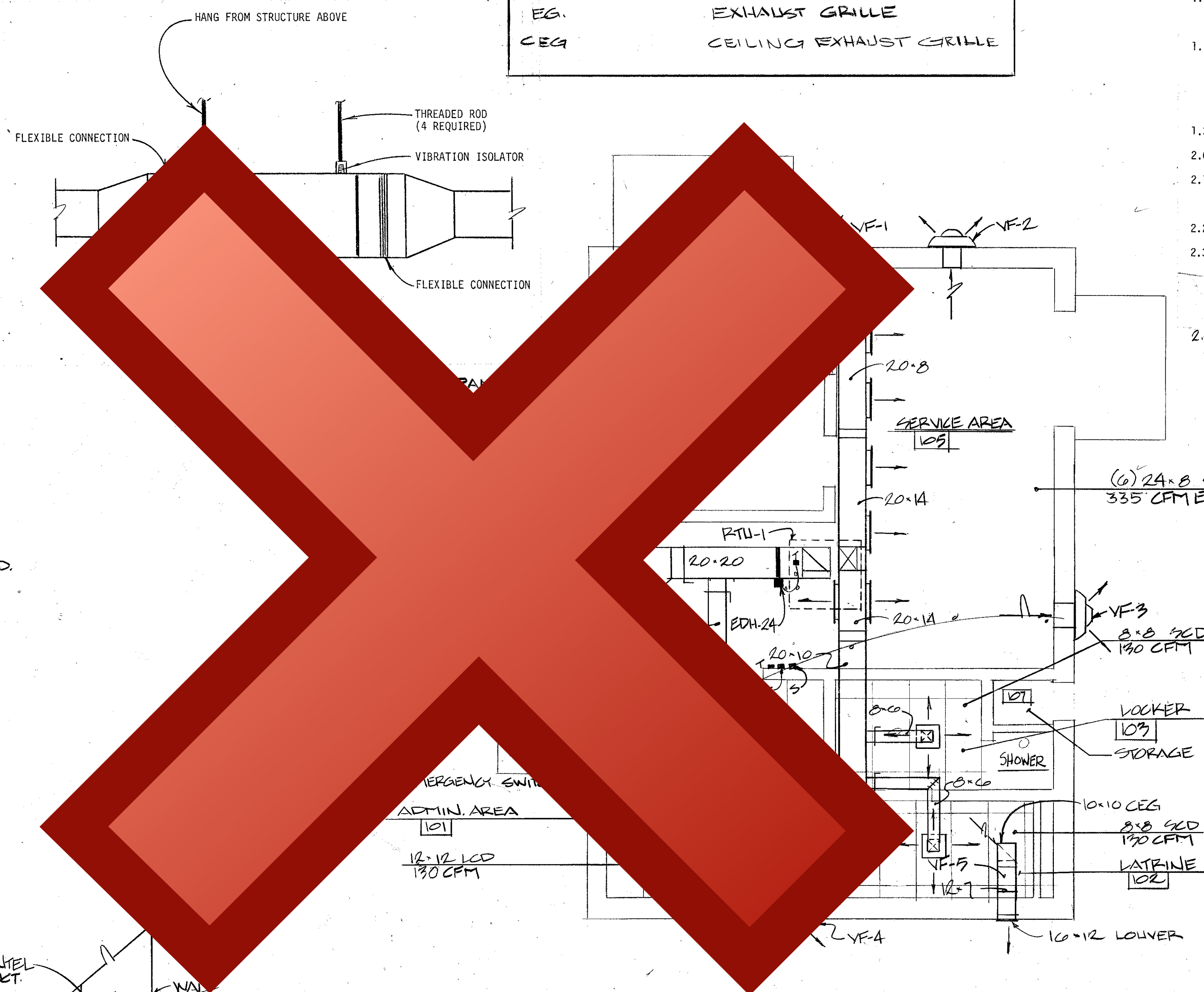
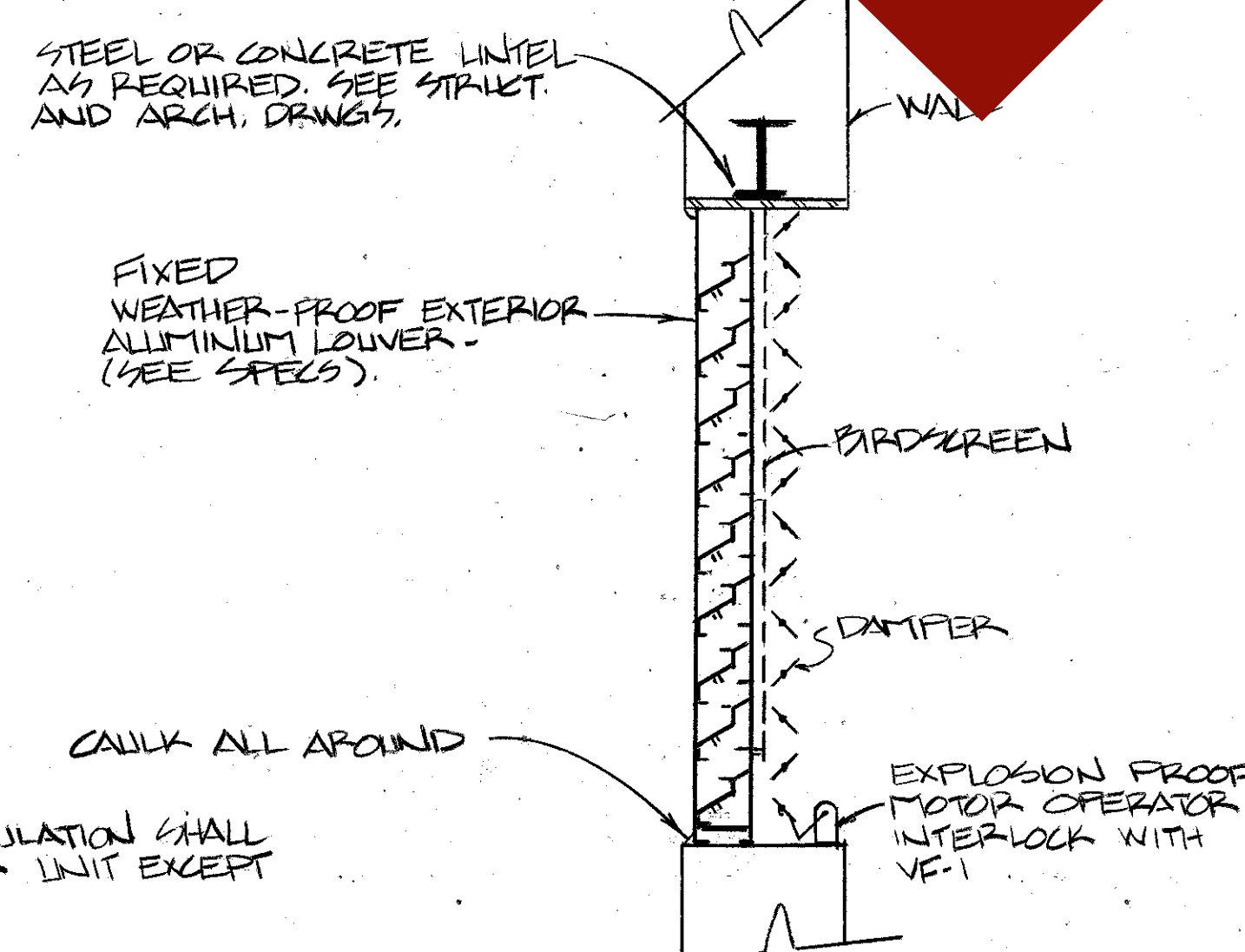
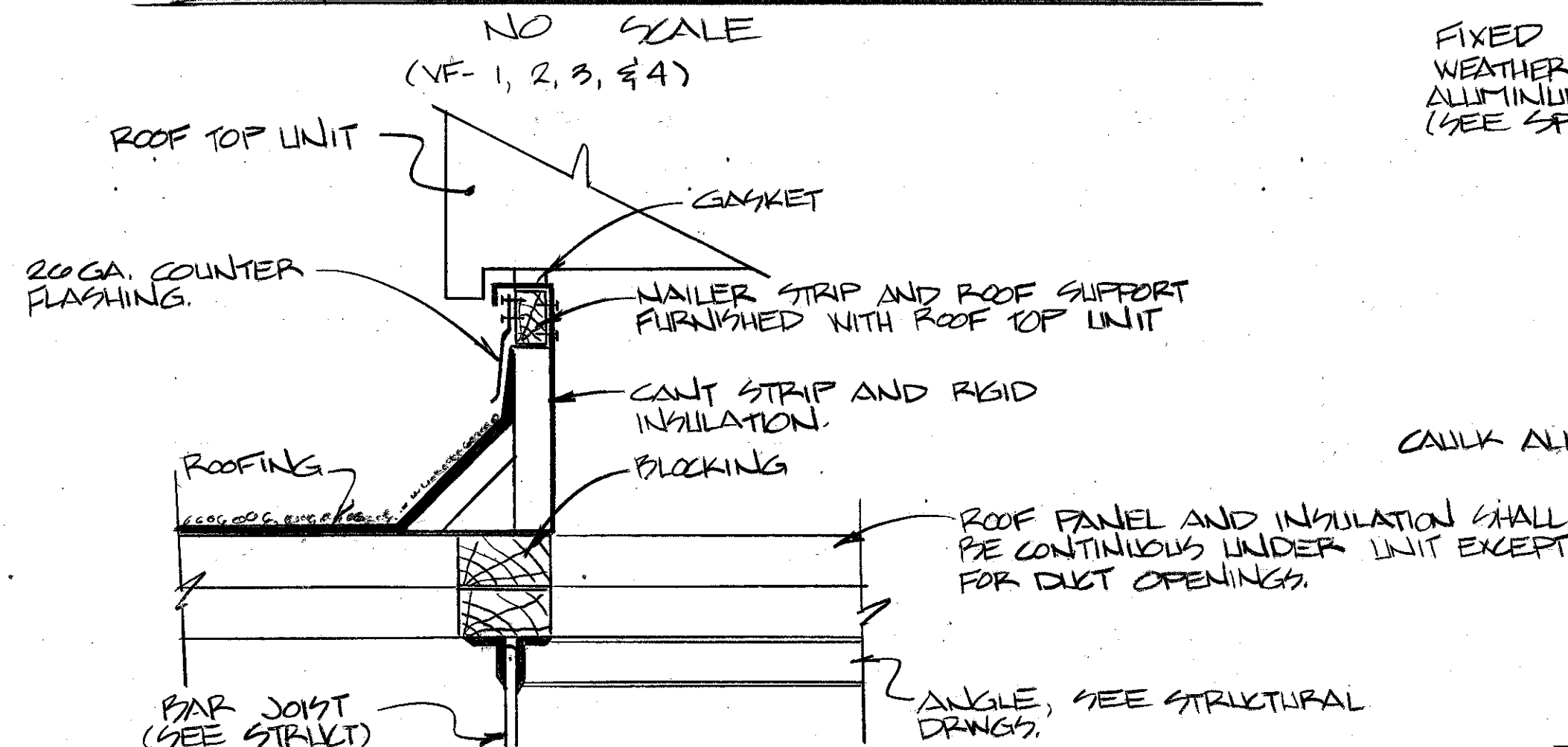
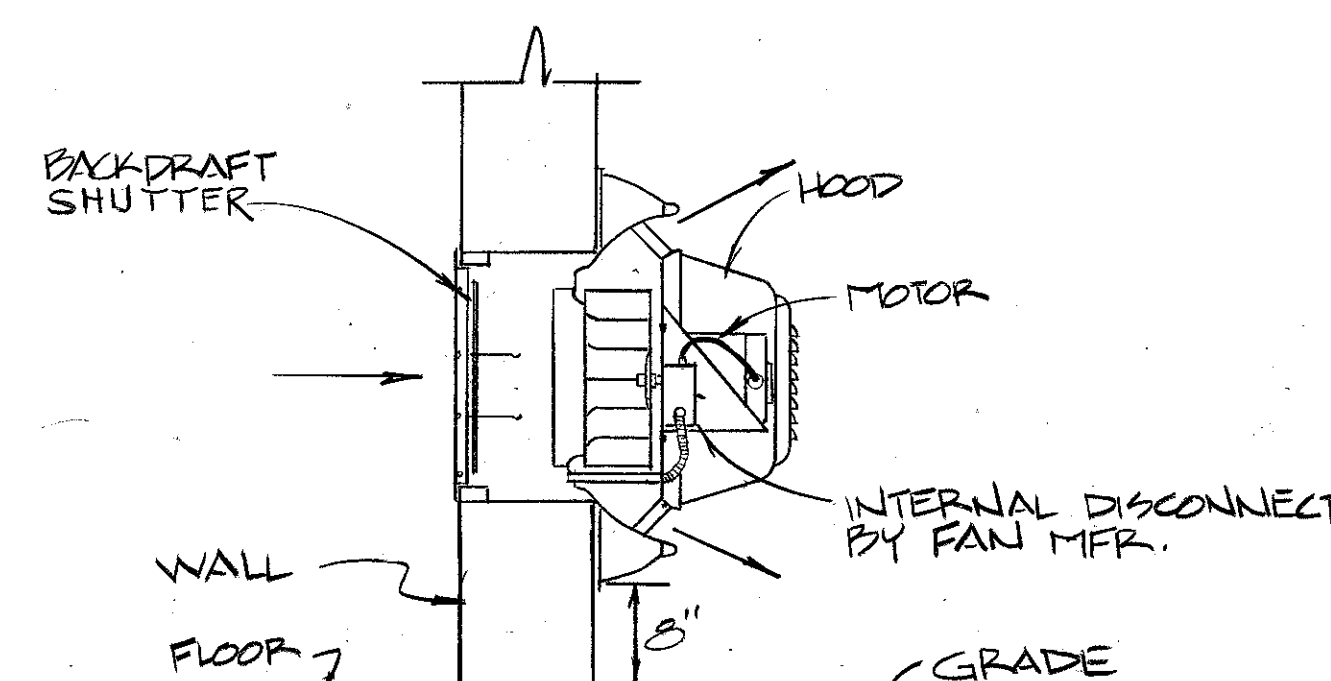
VENTILATING FAN SCHEDULE **								
MARK	TYPE	CFM	SP	HP	SONES	DRIVE	VOLTS/PHASE	CONTROLLED BY
VF-1	WALL CENTR	850	1/8"	1/8	6	DIRECT	120/1	WALL SWITCH
VF-2	WALL CENTR	1700	1/4"	1/4	5	DIRECT	120/1	INTERLOCK W/RTU FAN
VF-3	WALL CENTR	250	1/4"	1/20	5	DIRECT	120/1	INTERLOCK W/RTU FAN
VF-4	WALL CENTR	300	1/8"	1/12	5	DIRECT	120/1	WALL SWITCH
VF-5	IN LINE	200	1/8"	1/15	5	DIRECT	120/1	INTERLOCK W/RTU FAN

* WITH SOLID STATE SPEED CONTROLLER. (LOCATE OUTSIDE IN WEATHER PROOF LOCKABLE PANEL BOX (SEE TEMP CONTROL SPEC) PROVIDE ON-OFF WALL SWITCH FOR V-F4 ONLY. SPEED CONTROLLER SHALL BE USED TO INITIALLY ADJUST CFM OF FAN TO INDICATED VALUES, PANEL BOX SHALL BE LOCKED AFTER ADJUSTMENT OF FANS.

** ALL FANS SHALL BE EXPLOSION PROOF.

ELECTRIC DLT HTR. SCHED *			
MARK	BTH/HR	KW	VOLTS/PHASE
EDL-2A	81,888	2A	200/13

* DUCT HEATER SHALL BE EXPLOSION PROOF. HEATER SHALL BE CONTROLLED BY A DUCT MTD. THERMOSTAT AND A SILICONE RECTIFIER FOR INFINITE CONTROL. SET T^{STAT} AT 55°F.



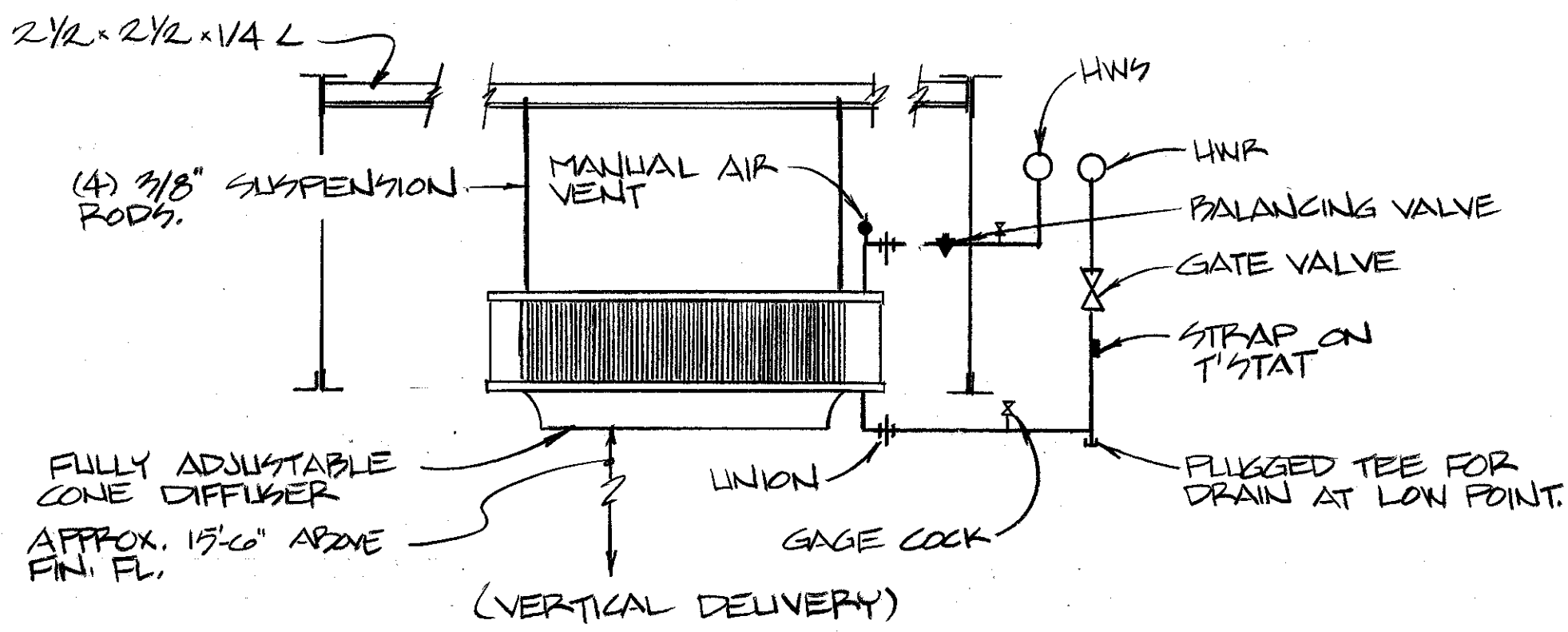
SYMBOLS

RTU	ROOF TOP UNIT
EDH-24	ELECTRIC DWT. HEATER, 24 KW
—□	MOTOR OPERATED DAMPER
—	MANUAL OPERATED DAMPER
■ T	THERMOSTAT
▼	UNDER-CUT DOOR 1"
■ LT	LOW LIMIT STAT.
■ S	SWITCH
SCD	SQUARE CLG. DIFF. (SURFACE MTL)
LCD	LAY-IN CLG. DIFFUSER.
SR	SUPPLY REGISTER.
EG.	EXHAUST GRILLE
CEG	CEILING EXHAUST GRILLE

REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED

SEQUENCE OF OPERATION FOR THE HYDRAZINE FACILITY:

- 1.0 Rooftop Heat Pump (HEATING ONLY)
- 1.1 An explosion proof modulating thermostat shall, through an SCR Controller, maintain 55 degrees F discharge from the electric preheat coil in the outside air inlet to the unit.
- 1.2 An explosion proof two stage heating room thermostat shall operate the unit's heating cycle and supplementary electric duct heater, also explosion proof, to maintain room setpoint at 70 degrees F. Unit fan operation shall be continuous. Provide an explosion proof switch and low limit thermostat (setpoint 60 degrees F) so that system can be manually switched from normal to low limit operation.
- 1.3 Provide fire detection thermostats. See Specifications.
- 2.0 Vent Fans:
- 2.1 VF-1 shall be started by an explosion proof wall switch and shall be interlocked to control the dampers mounted behind the louvers in Room 106. Damper motor shall be explosion proof.
- 2.2 VF-2 and VF-5 shall run continuously.
- 2.3 VF-4 shall be controlled by an explosion proof wall switch mounted on a red back plate labeled "Emergency Vent" located as shown in the administrative area. When this "Emergency Vent" switch is turned on, VF-4 shall start, VF-3 (otherwise running continuously) shall stop and the damper in the supply duct to the administrative office shall open from its preset minimum of 135 CFM to full.
- 2.4. PROVIDE SOLID STATE SPEED SWITCHES FOR VF-2, VF-4, AND VF-5. SPEED SWITCHES TO BE USED TO BALANCE AND FLOW THE FANS. POINT SWITCHES IN A CONTROL PANEL AND MOUNT CONTROL PANEL IN STORAGE RM 107.



HOT WATER UNIT HEATER
NO SCALE

HOT WATER UNIT HEATER SCHED.							
MARK	TYPE	FAN		WATER			
		CFM/HP	VOLTS/PH	GPM	IN. F. OUT. F.	MPH	
UH-1	PROPELLER (VERT.)	700/1/20	120/1	458	180"	100	25.1

SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE							
MARK	TYPE	FAN			COOLING		
		CFM	ESP	HP	VOLTS/PH.	TOT. SENS.	ENT. AIR
AH-1	DX, HORIZONTAL	600	.3"	1/5	208/1	19.5	80°F D.B./ 67°F W.B.

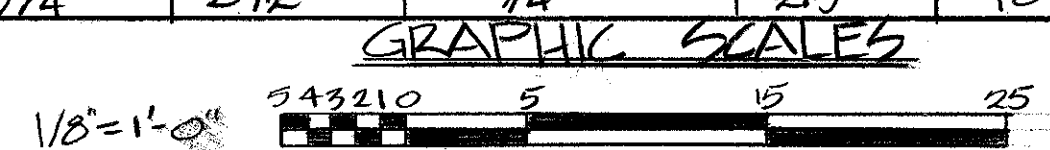
SPLIT SYSTEM AIR COOLED CONDENSING UNIT SCH'D.				
MARK	CONDENSER	COMP. FLA.		VOLTS/PHASE
	EA. °F FAN FLA.			
CU-1	95 2.5	13.0		208/1

VENTILATING FAN SCHEDULE *							
MARK	TYPE	CFM	SP	HP	SONES	DRIVE	VOLTS/PHASE
VF-1	CENTRIFUGAL	999	1/8"	1/4	4	BELT	120/1

* FURNISH WITH INTEGRAL CONTROLS

WATER PUMP SCHEDULE						
MARK	TYPE	GPM	HEAD	RPM	HP	VOLTS/PHASE
P-1	IN-LINE	35	30	1750	3/4	208/1
P-2	IN-LINE	35	30	1750	3/4	208/1

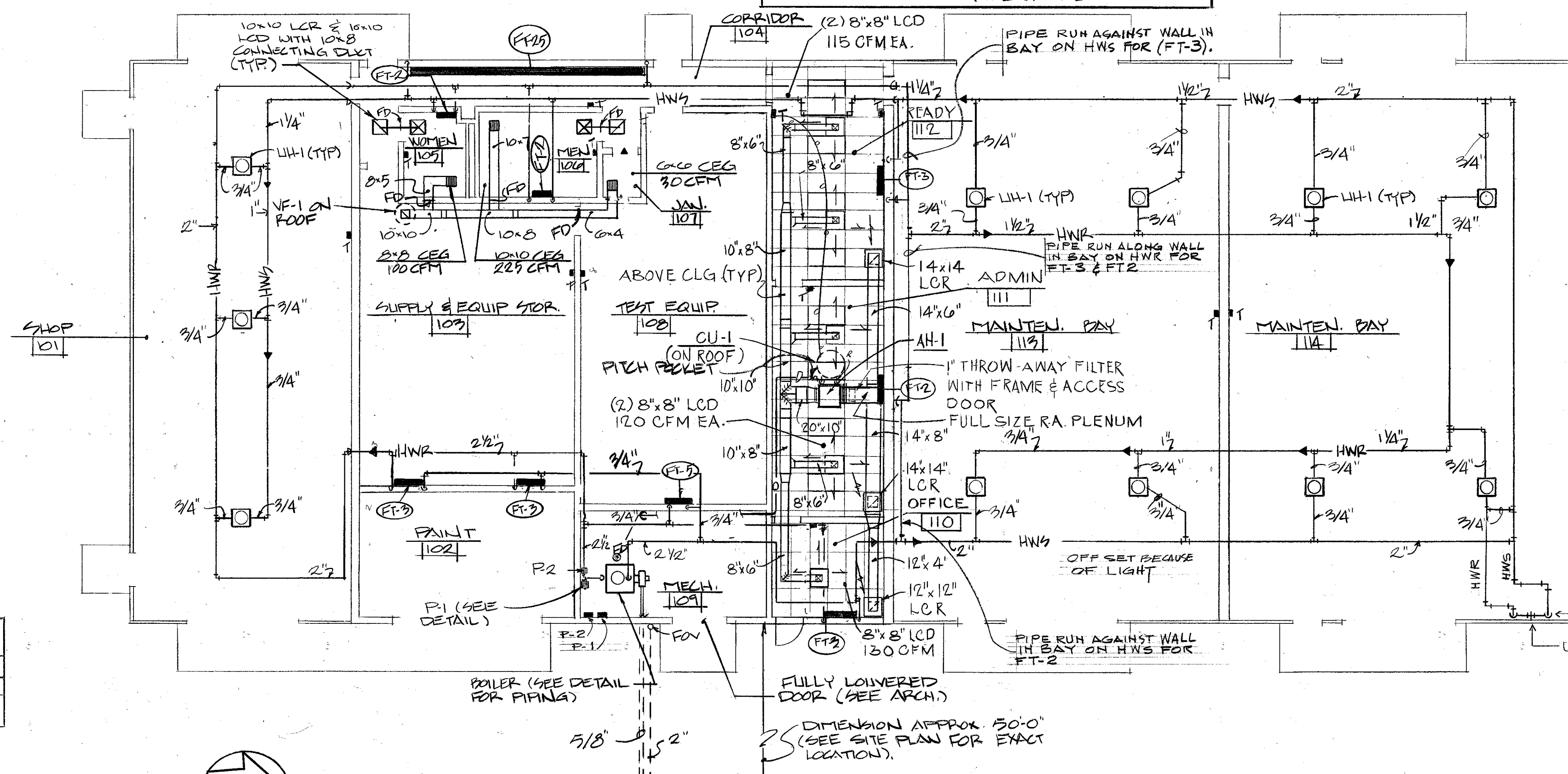
HOT WATER FINNED RADIATION SCHEDULE									
MARK	TYPE	MPH	ROWS	ELEMENT LENGTH (FT)	DEPTH (IN)	HEIGHT (IN)	RUNOUT SIZE	MOTOR VALVE	
FT-2	FINNED TUBE	2.3	1	2'-0"	5 1/4"	2 1/2"	3/4"	.5	10'
FT-3	FINNED TUBE	3.4	1	3'-0"	5 1/4"	2 1/2"	3/4"	.5	10'
FT-5	FINNED TUBE	5.7	1	5'-0"	5 1/4"	2 1/2"	3/4"	1	10'
FT-25	FINNED TUBE	25.25	1	25'-0"	5 1/4"	2 1/2"	3/4"	2.5	10'



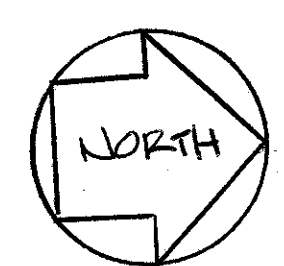
HVAC SYMBOLS	
—HWS—	HOT WATER SUPPLY
—HWR—	HOT WATER RETURN
—UN—	UNION
—R—	REDUCER
—S—	STRAINER
—G—	GATE VALVE
—C—	CHECK VALVE
—GLO—	GLOBE VALVE
—PR—	PRESSURE REDUCING VALVE
—PRV—	PRESSURE RELIEF VALVE
—MOV—	MOTOR OPERATED VALVE
—MAV—	MANUAL AIR VENT
—T—	THERMOMETER
—P—	PRESSURE GAGE

HVAC SYMBOLS CON'T	
—FOV—	FUEL OIL VENT
—FOS—	FUEL OIL SUPPLY
—FOR—	FUEL OIL RETURN
—FOF—	FUEL OIL FILL
—T—	THERMOSTAT
—FD—	FLOOR DRAIN (SEE PLG.)
—B—	BALANCING VALVE
—LCO—	LAY-IN-CEILING DIFFUSER
—LCR—	LAY-IN-CEILING RETURN
—CU—	AIR COOLED CONDENS. UNIT
—CEG—	CEILING EXHAUST GRILLE
—AH—	AIR HANDLER
—D—	CONDENSATE DRAIN
—R—	REFRIGERANT LINES
—CD—	CONDENSATE DRAIN TRAP
—FD—	PIPE DAMPER

REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED

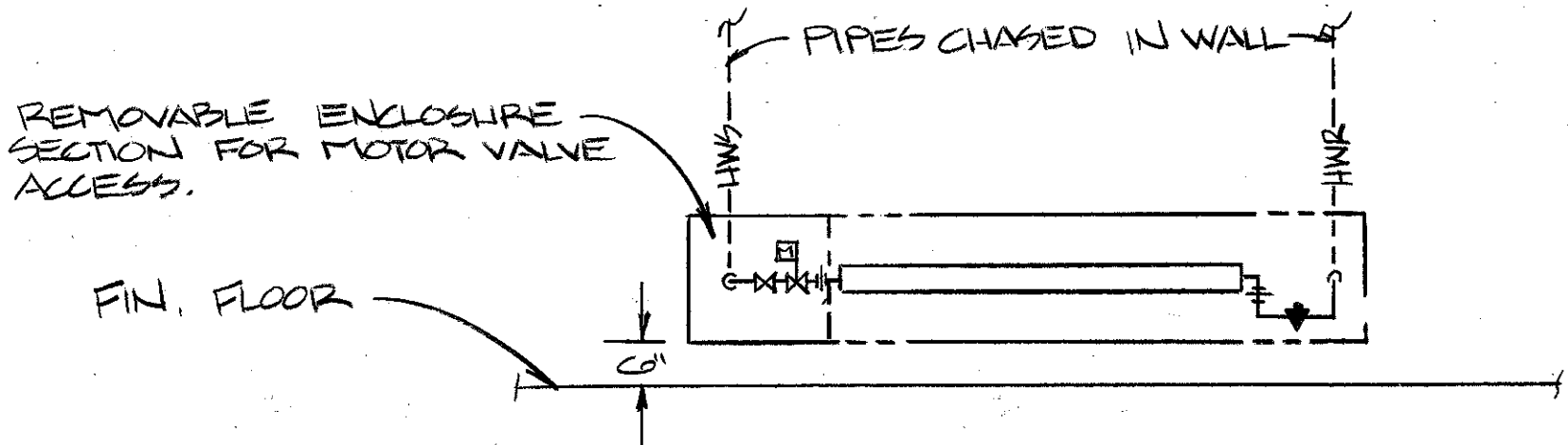


SPECIAL NOTES
1. LOCATE UNIT HEATERS (VERT.) IN JOIST SPACE. BOTTOM OF UNIT HEATER SHALL NOT BE MORE THAN 4" BELOW BOTTOM CHORD OF JOIST TO AVOID BRIDGE CRANES.
2. FITCH POCKETS FOR REFRIGERANT LINES SHALL BE IN ACCORDANCE WITH FLASHING & SHEET METAL SECTION OF SPEC AND BUILT UP BITUMINOUS ROOFING PORTION OF SPEC.
3. SEE DETAIL SHEET 13, FOR SLEEVES THROUGH CONCRETE HALLWAY.

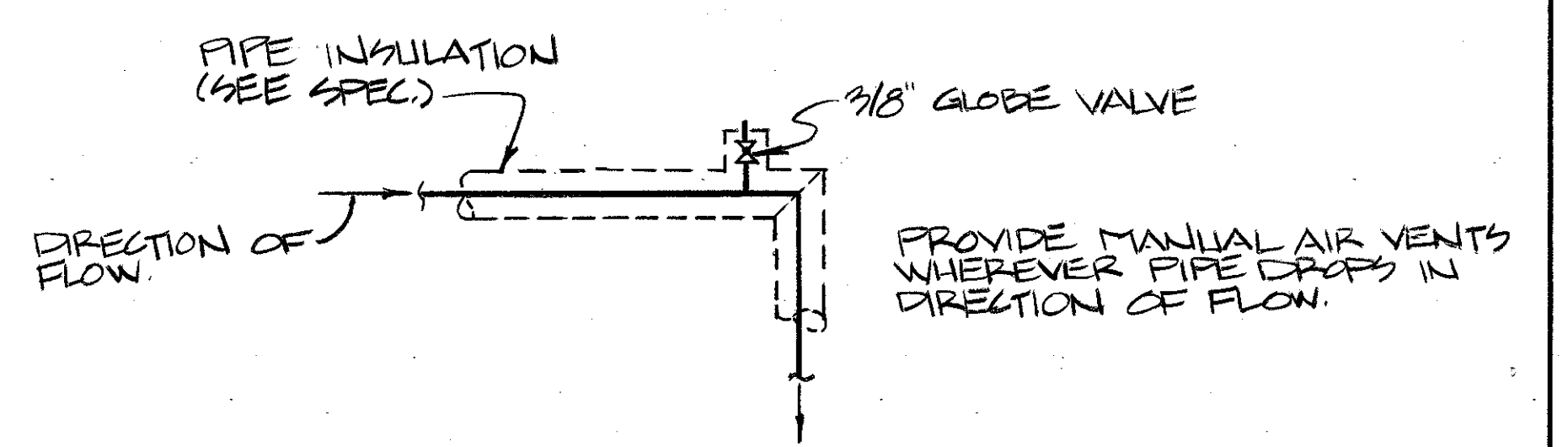


HVAC FLOOR PLAN - BLDG 1816

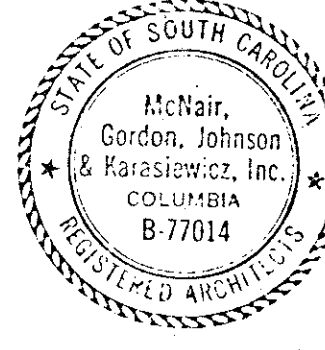
BLDG SCALE: 1/8"=1'-0"



HOT WATER FINNED RADIATION
NO SCALE



MANUAL AIR VENT
NO SCALE

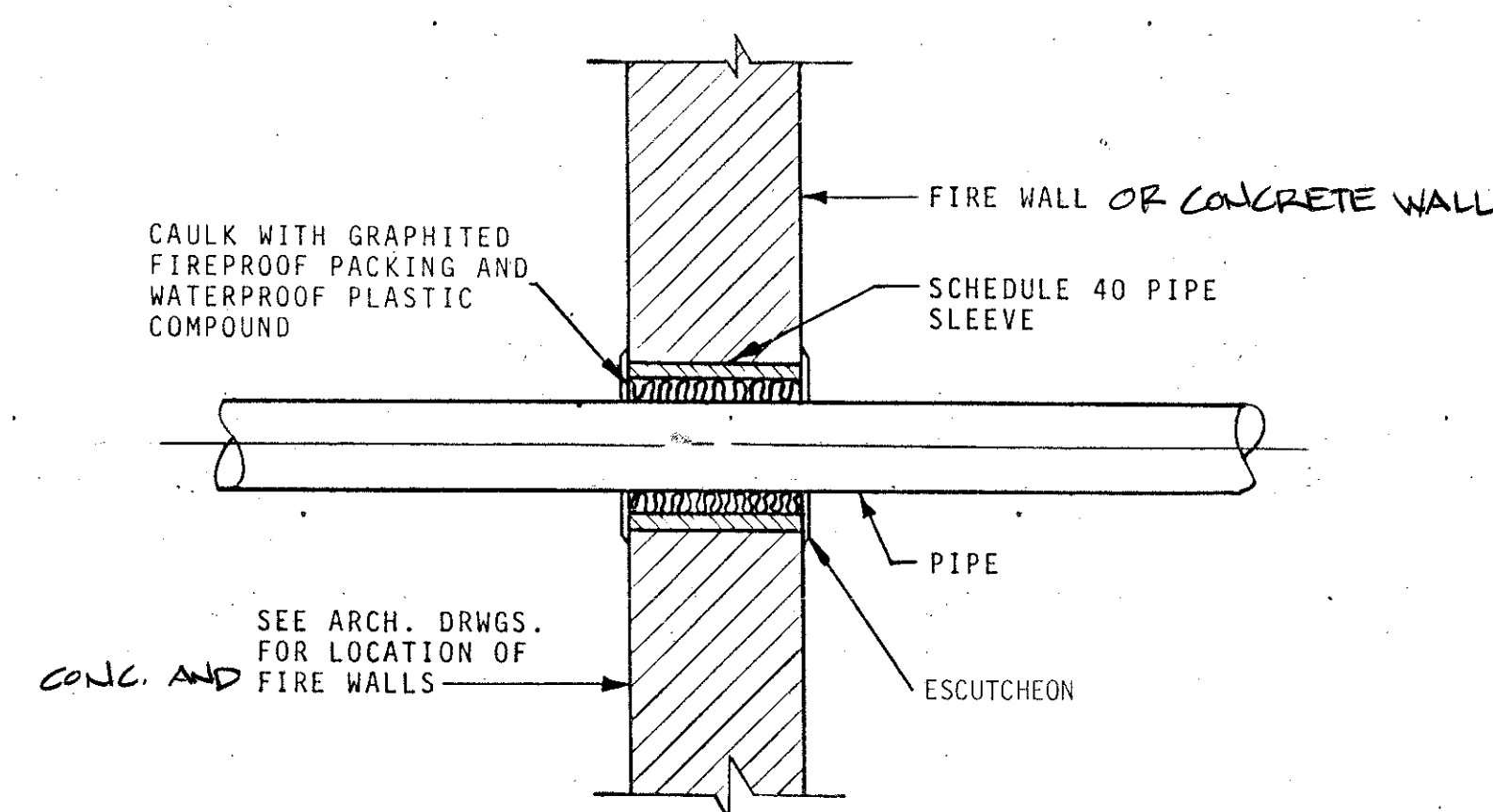
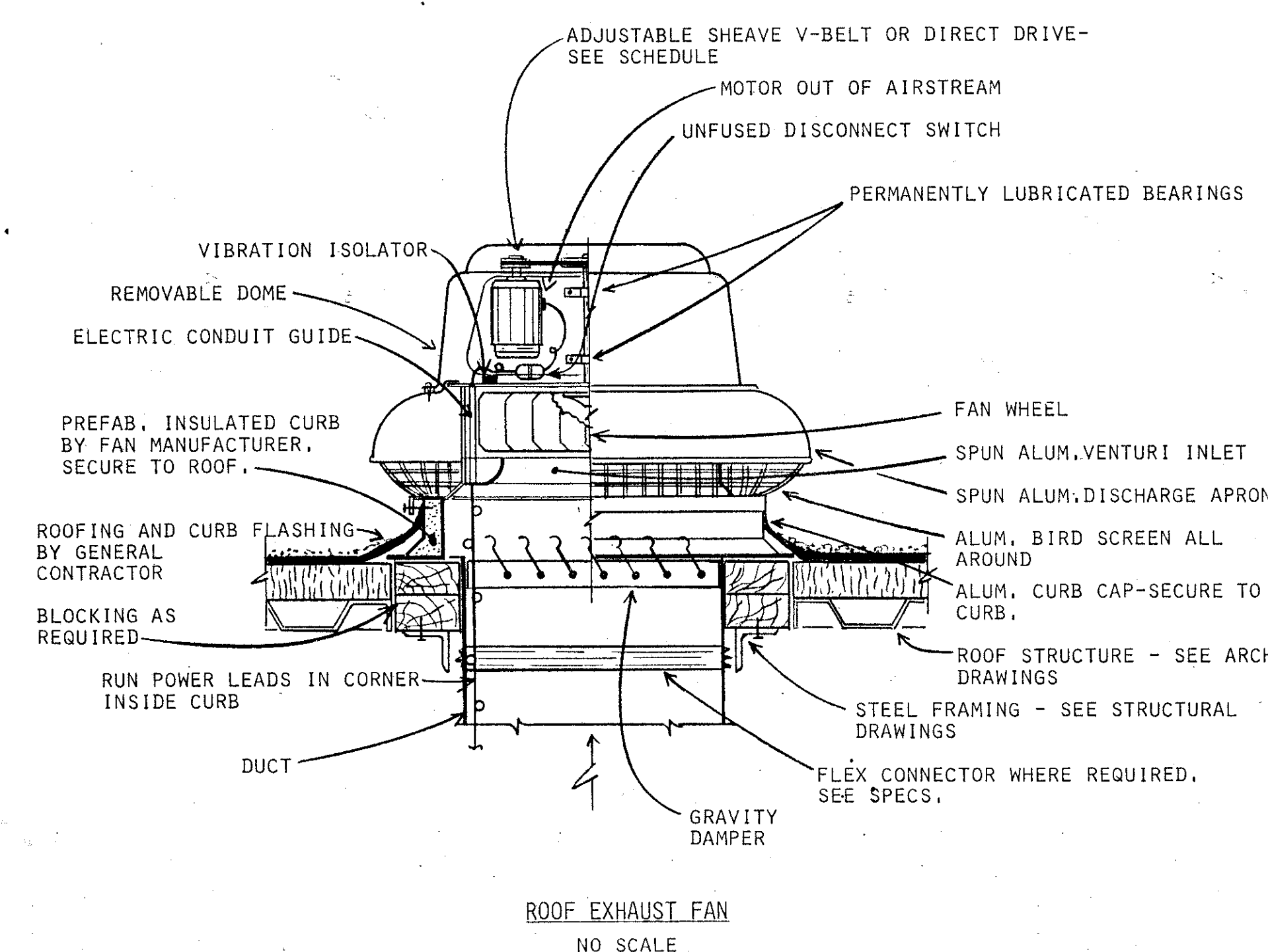
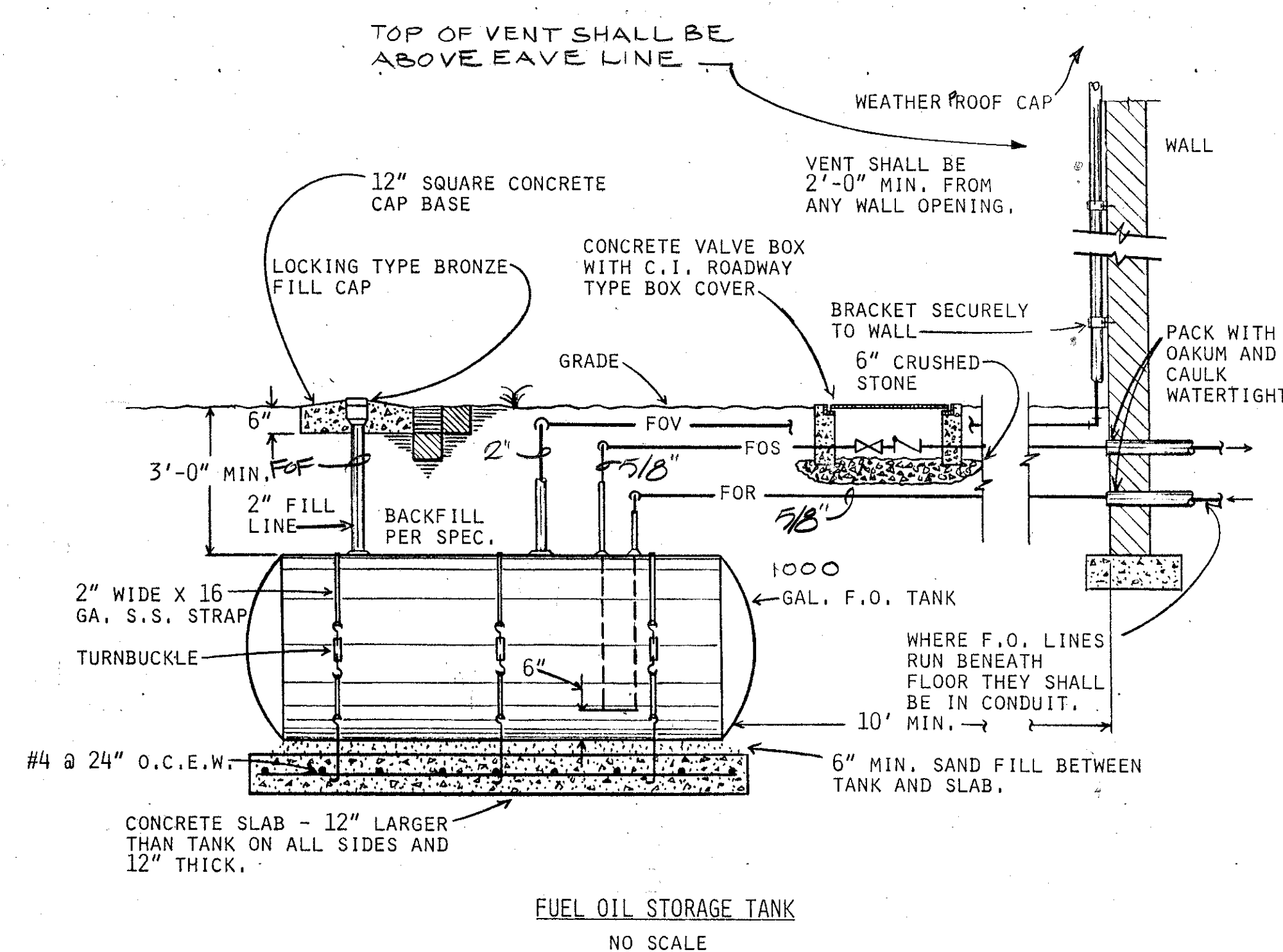


ARCH. & ENGR. SEAL

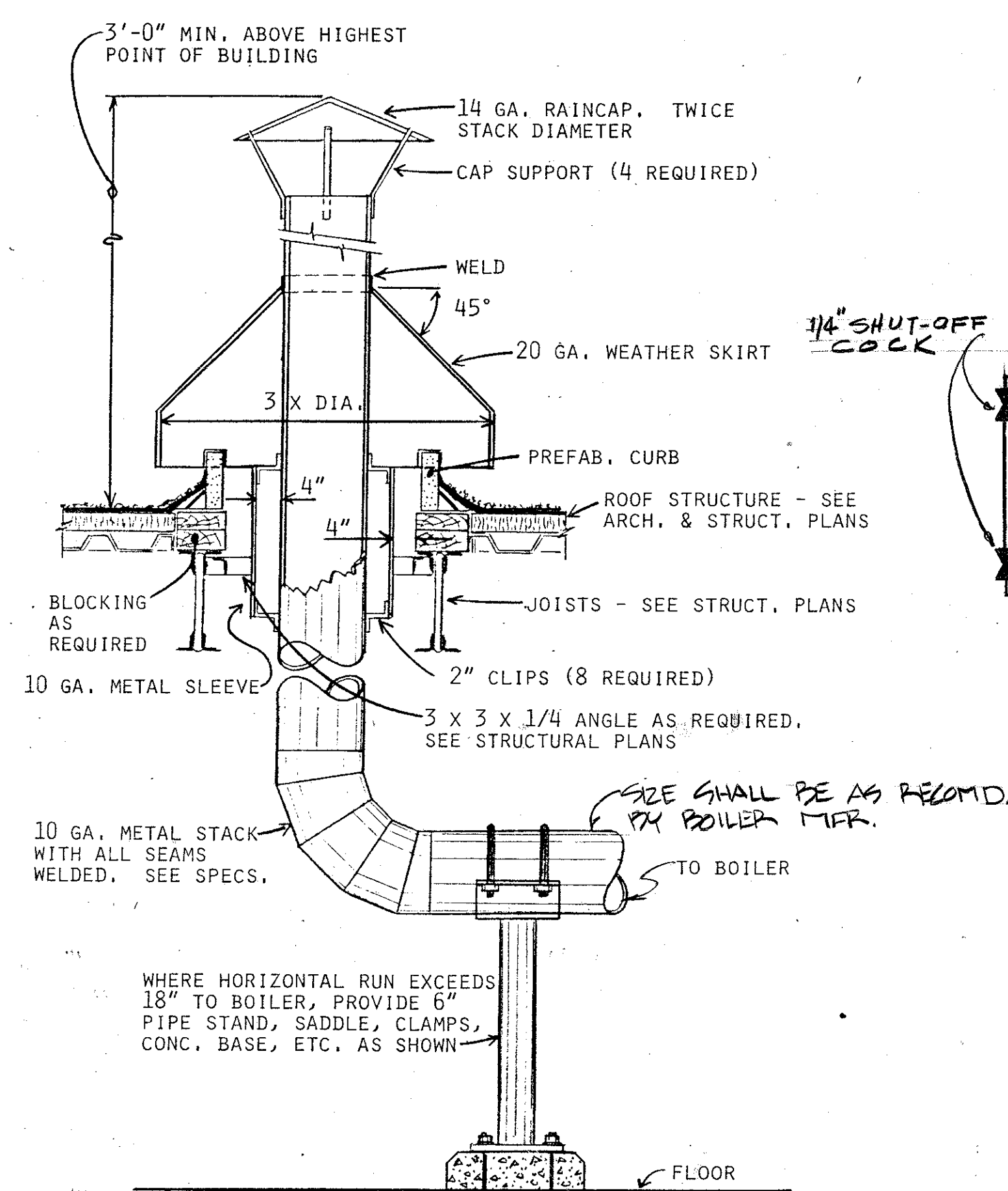
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McNAIR, GORDON, JOHNSON & KARASIEWICZ ARCHITECTS - ENGINEERS - PLANNERS P.O. BOX 84 COLUMBIA, SC 29902		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
DESIGN: GLENN D. JOHNSON, CHIEF ENGINEER SUPERVISOR: CH. ENGR. SUBMITTER: W. J. JOHNSON, JR. SOUTHERN DIVISION P.O. BOX 1000 CHARLESTON, S.C. 29405		SHAW AIR FORCE BASE SOUTH CAROLINA HYDRAZINE FAC. & BLDG 1816 BLDG 1816 HVAC FLOOR PLAN, DETAILS & SCHEDULES	
APPROVED: [Signature] DATE: 1/17/80	DATE: 1/17/80	SIZE: F	CODE IDENT NO: 80091
OFFICER IN CHARGE: [Signature] DATE: 1/17/80		NAVFAC DRAWING NO: 50712.70	
APPROVED: [Signature] DATE: 1/17/80		CONSTR CONTR NO: 1162467-80-C-0026	
EPD FOR COMMANDER, NAVFAC		SCALE: AS NOTED SPEC: 06-80-0026 SHEET 17 OF 25	

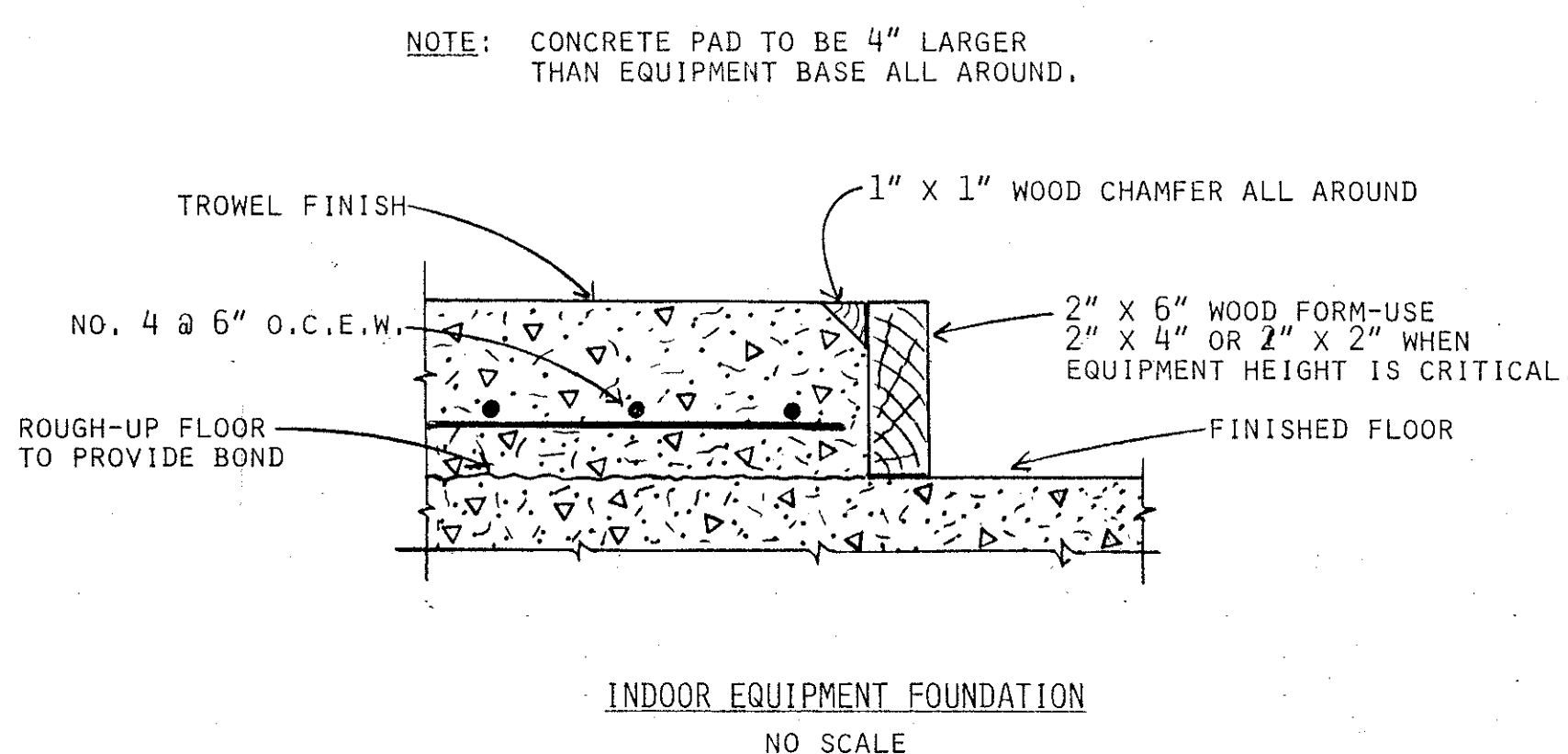
REVISIONS				
LET	DESCRIPTION	PREP'D BY	DATE	APPROVED



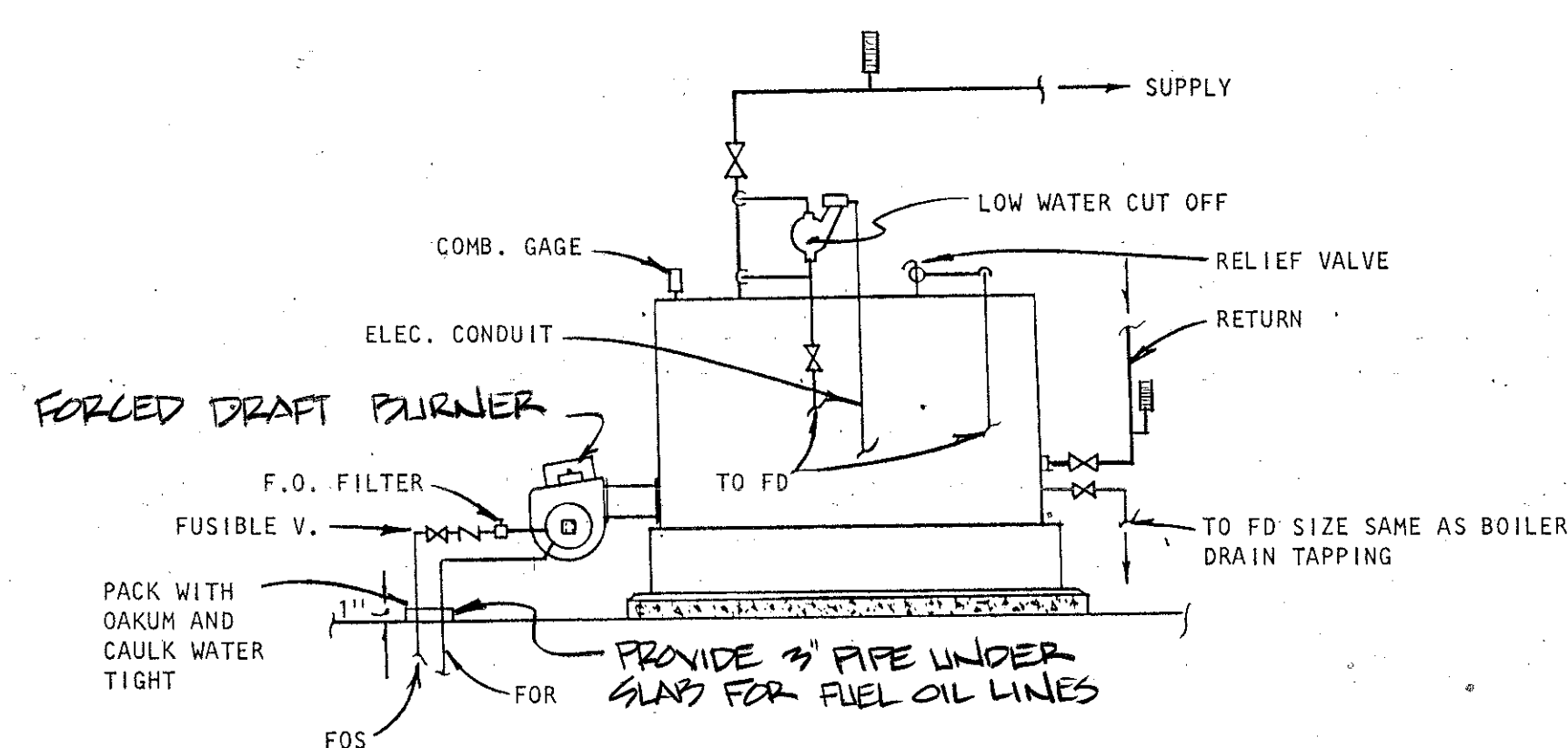
PIPE PENETRATION THRU
FIRE WALL OR CONCRETE WALL
NO SCALE



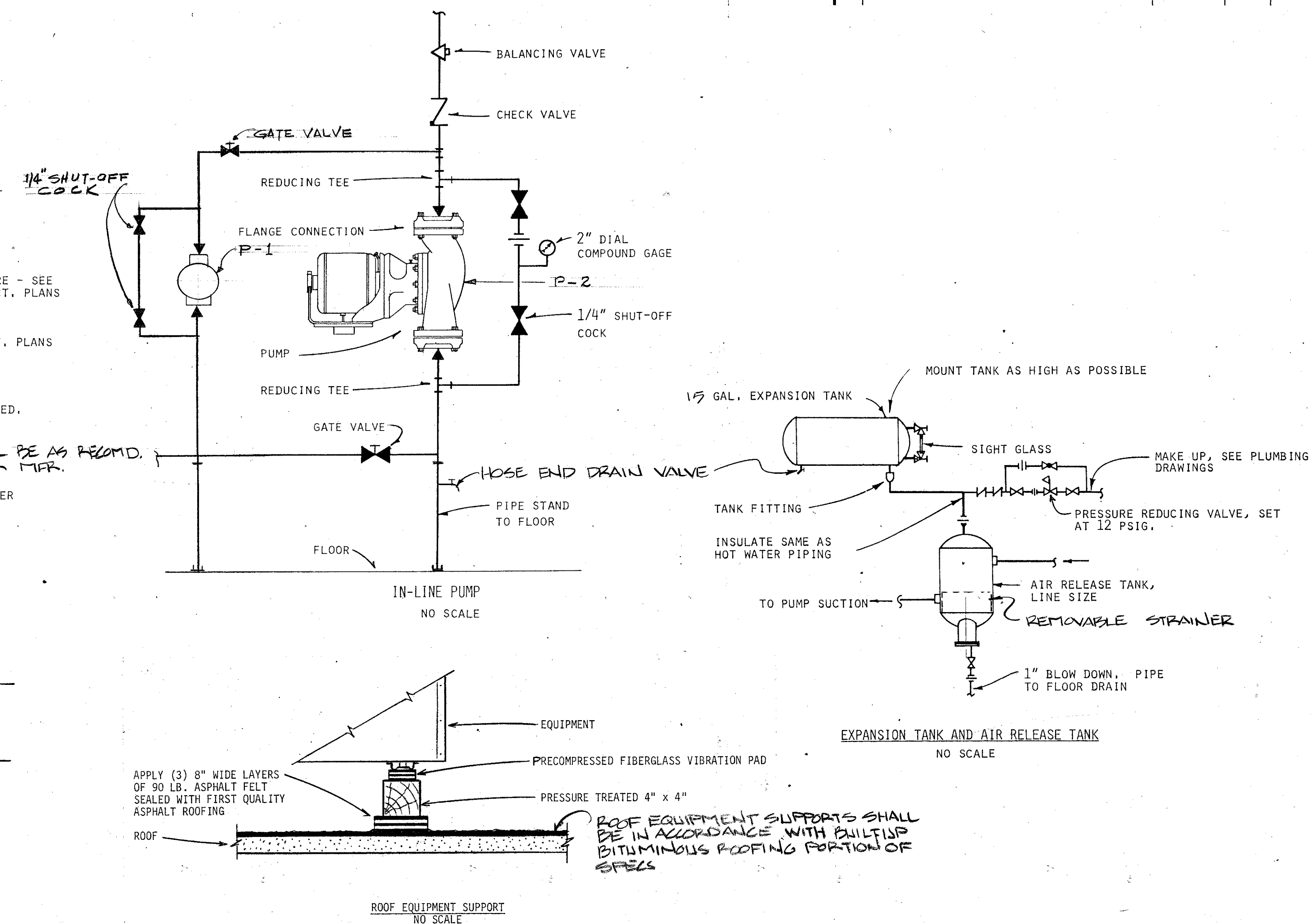
BOILER STACK DETAIL
NO SCALE



INDOOR EQUIPMENT FOUNDATION
NO SCALE



OIL FIRED HOT WATER BOILER PIPING



EXPANSION TANK AND AIR RELEASE TANK
NO SCALE

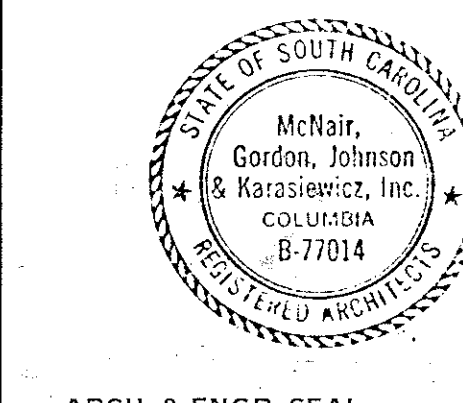
SEQUENCE OF OPERATION FOR THE MISSILE ASSEMBLY SHOP:

- 1.0 Hot Water Boiler: The hot water boiler shall not run over 70 degrees F outside air temperature. Provide an emergency shut off switch for boiler in mechanical room.
- 2.0 Unit Heaters: Wall thermostats, mounted where shown, shall cycle fans of the unit heaters to maintain set point. Strap-on thermostats shall prevent operation when hot water is not available.
- 3.0 Fin Tube Radiation: Wall thermostats, mounted where shown, shall cycle the two-way valves of the radiation as required.
- 4.0 Pumps: Provide manual transfer switch P-1 and P-2. One pump is to be a standby pump.
- 5.0 Split System Air Conditioning Unit: Wall thermostat, mounted where shown, shall cycle unit to maintain thermostat set point. Thermostat shall have subbase with "fan-on/ auto" and "cool-off" switches.

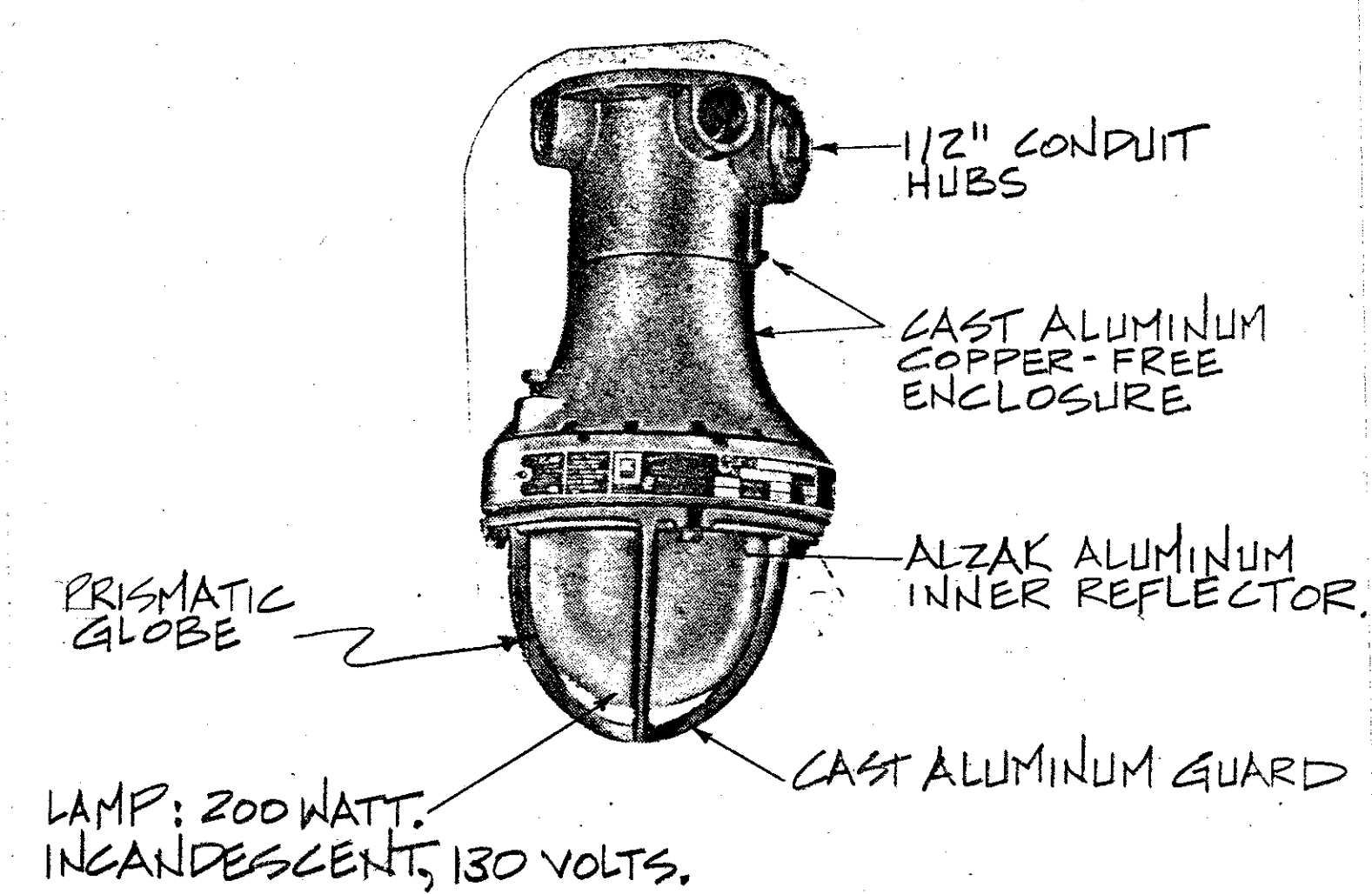
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DSHM#0462 DNR#04655 CHK#M466E		SHAW AIR FORCE BASE SOUTH CAROLINA	
SUPV MCGUIRE, CHR ENGR		HYDRAZINE FAC. & BLDG 1816	
SUBMITTED BY <i>Chen</i> DATE <i>1/17/80</i> PER MEMBER TITLE SOUTHERN DIVISION DIVISION		BLDG. 1816 HVAC DETAILS	
PROJ # <i>8462</i> DIR		OFFICER (IDENT NO)	
APPROVED DATE		NAVFAC DRAWING NO.	
APPROVED IN CHARGE		F 80091	
APPROVED DATE <i>C. T. Dwyer 1/17-80</i>		CONSTR CONTR NO. L62447-80-C-0066	
SCALE AS NOTED		SPEC602-002 NO. 40 SHEET 18 OF 25	

AS-BUILT



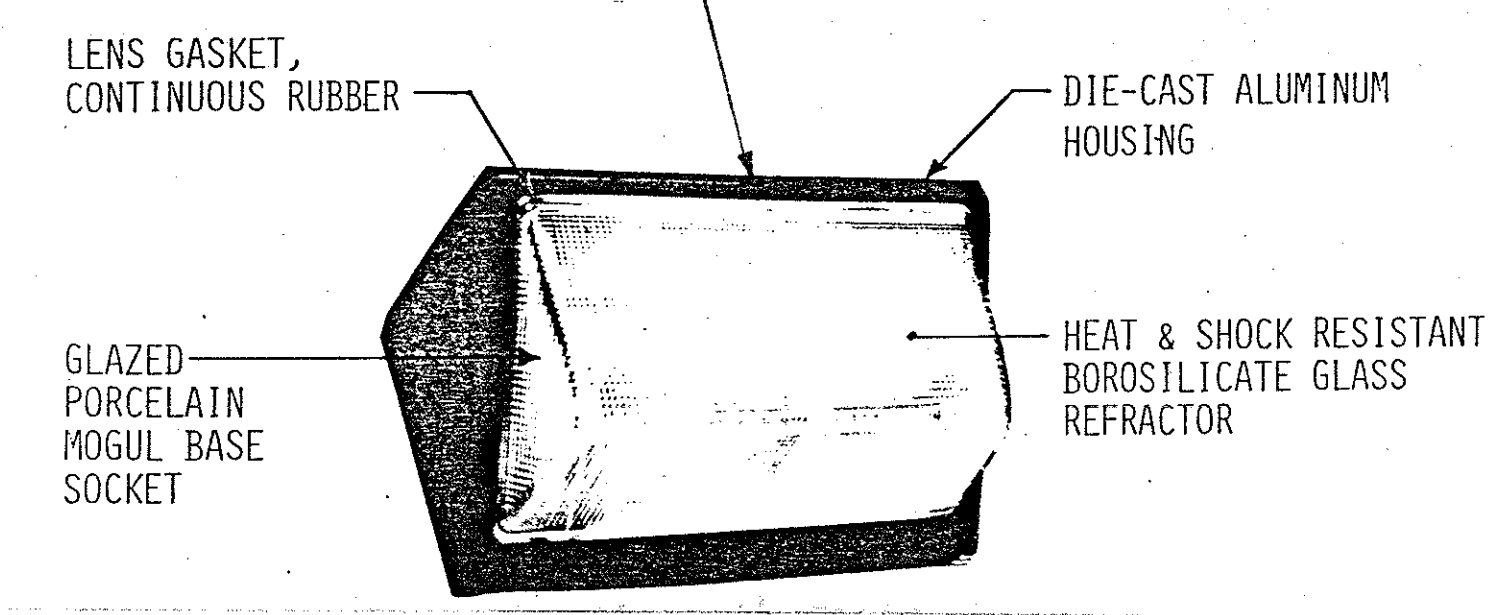
CLASS I, GROUPS B, C, D.



FIXTURE SYMBOL "A"
NOT TO SCALE

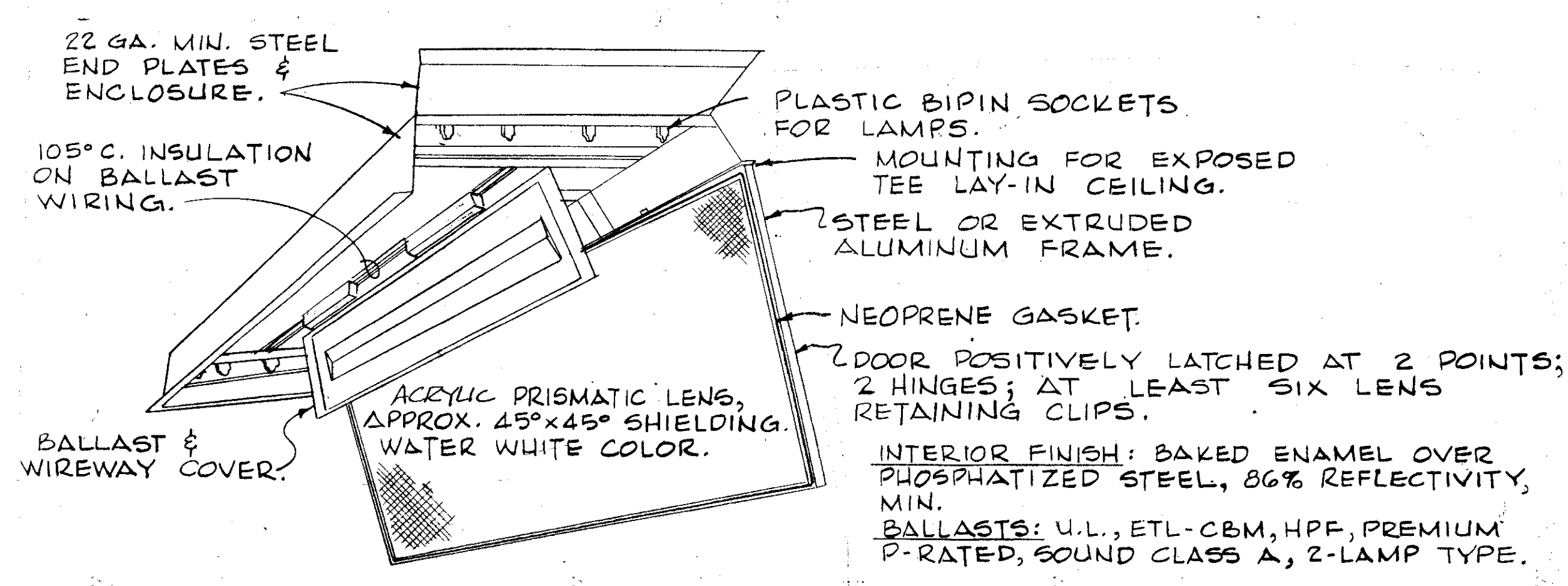
NOTE: SYMBOL "G" SAME AS SYMBOL "A" EXCEPT WITH PORCELAIN ENAMELED REFLECTOR & 250 W. METAL HALIDE LAMP (277V. BALLAST). (SEE NOTE, SHEET #20)

MISSILE ASSEMBLY BLDG.-277V. BALLAST. HYDRAZINE BLDG.-120V. BALLAST.



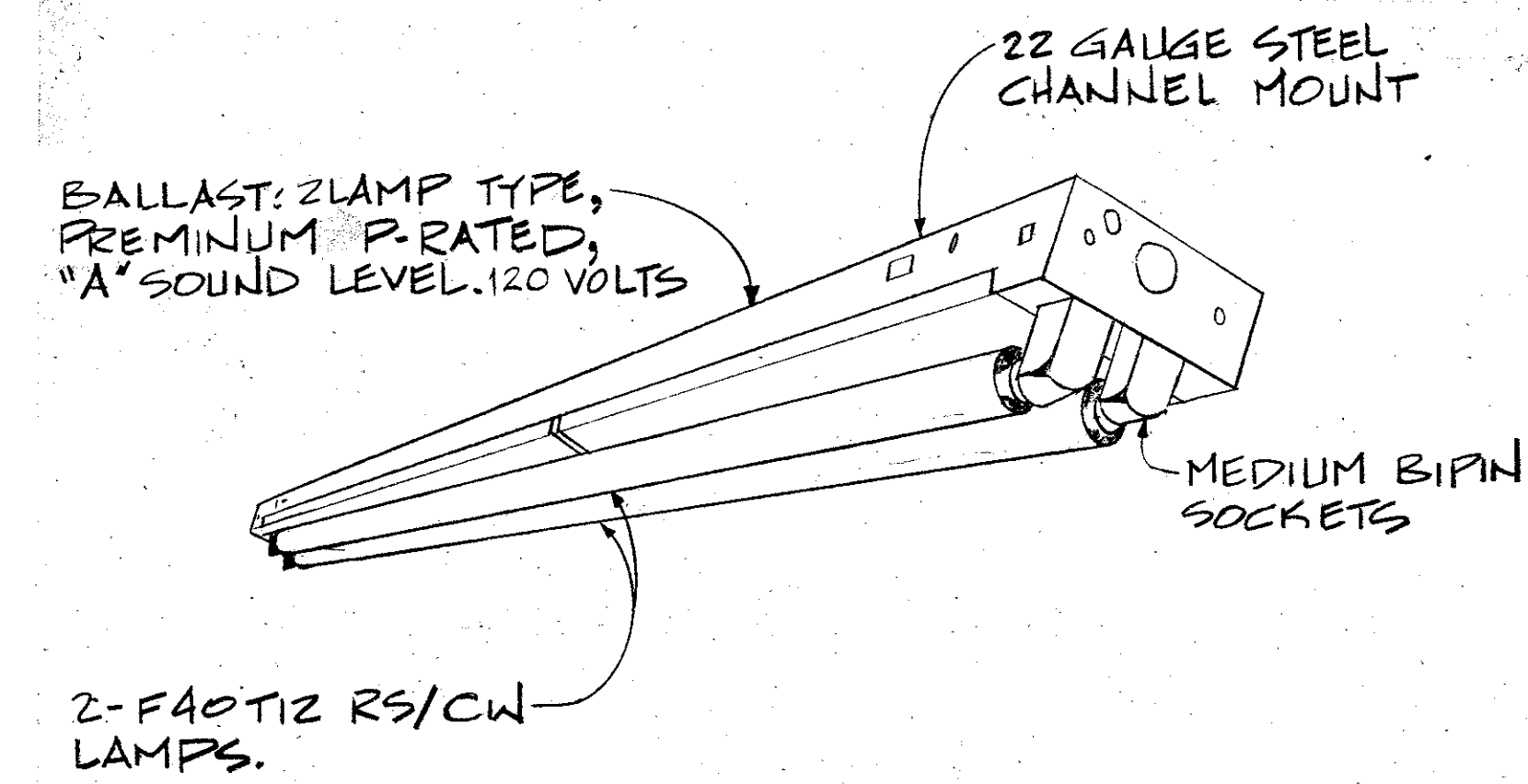
LAMP: 70 WATT HIGH PRESSURE SODIUM. REFLECTOR: ASYMMETRIC, SPECULAR ANODIZED ALUMINUM FOR 0-60° DISTRIBUTION.

FIXTURE SYMBOL "B"
NOT TO SCALE

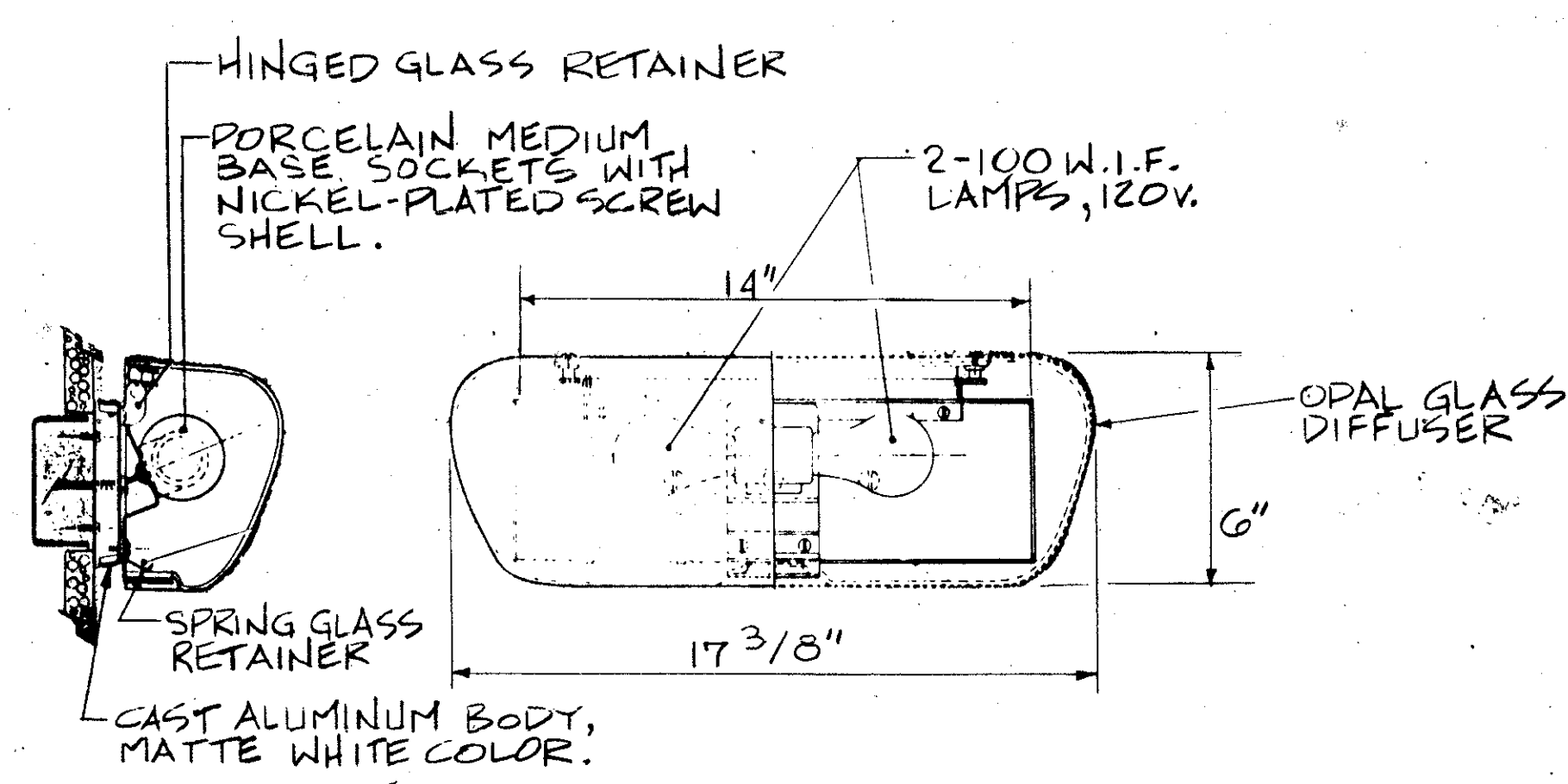


FIXTURE SYMBOL "E"
NOT TO SCALE

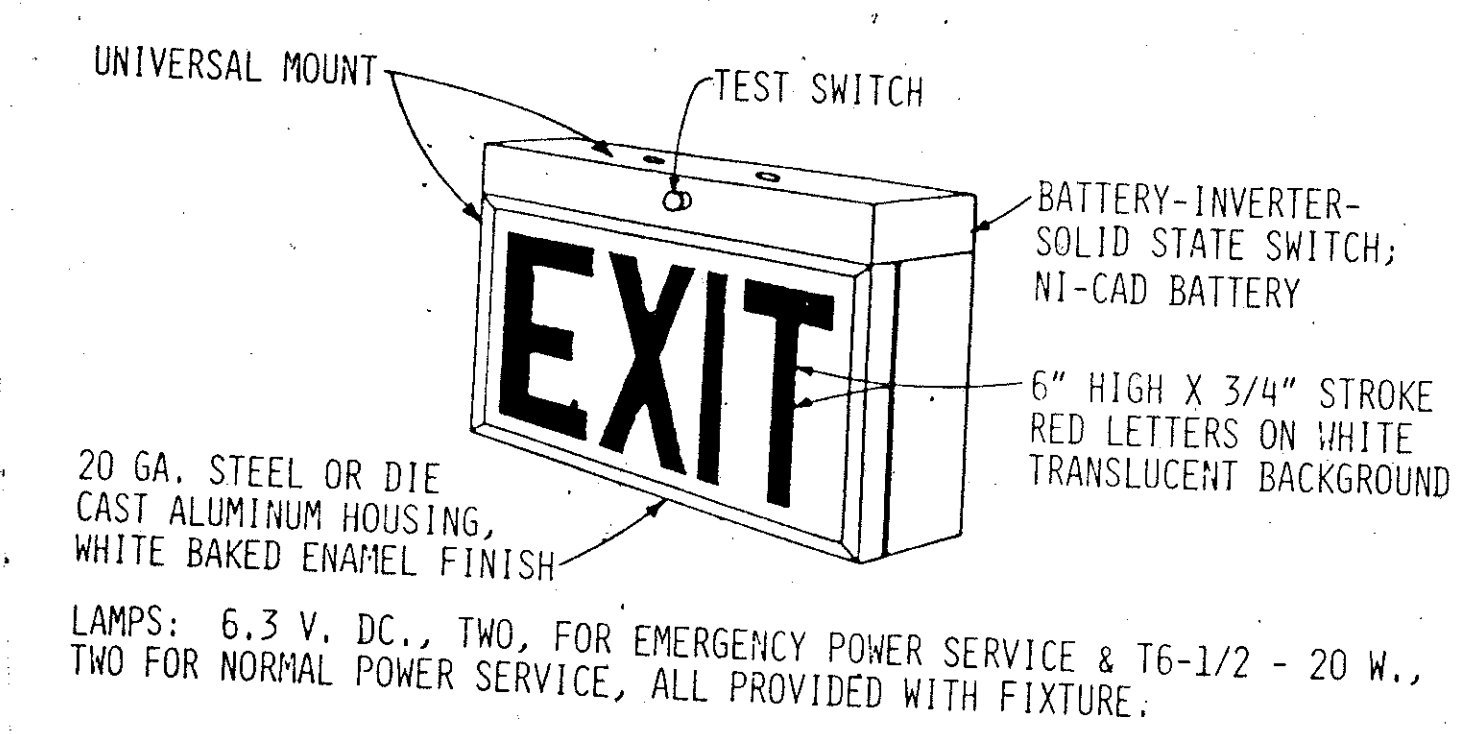
LAMPS: 4-FA0LW12/RS/CW, HIGH EFFICIENCY TYPE, 35 WATTS, 3000 LUMENS.



FIXTURE SYMBOL "L"
NOT TO SCALE

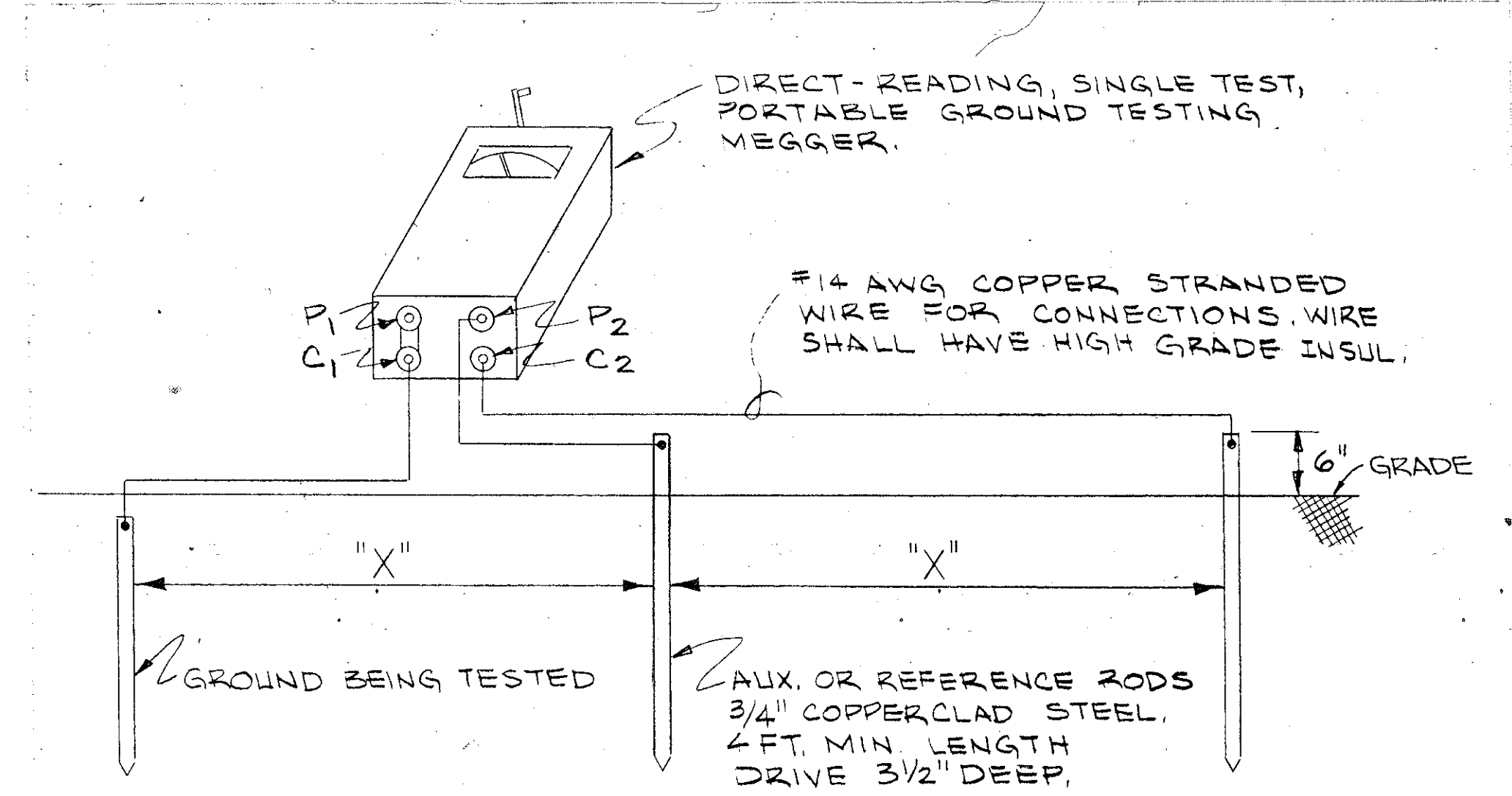


FIXTURE SYMBOL "F"
NOT TO SCALE



LAMPS: 6.3 V. DC., TWO, FOR EMERGENCY POWER SERVICE & T6-1/2 - 20 W., TWO FOR NORMAL POWER SERVICE, ALL PROVIDED WITH FIXTURE.

EXIT SIGN
NOT TO SCALE

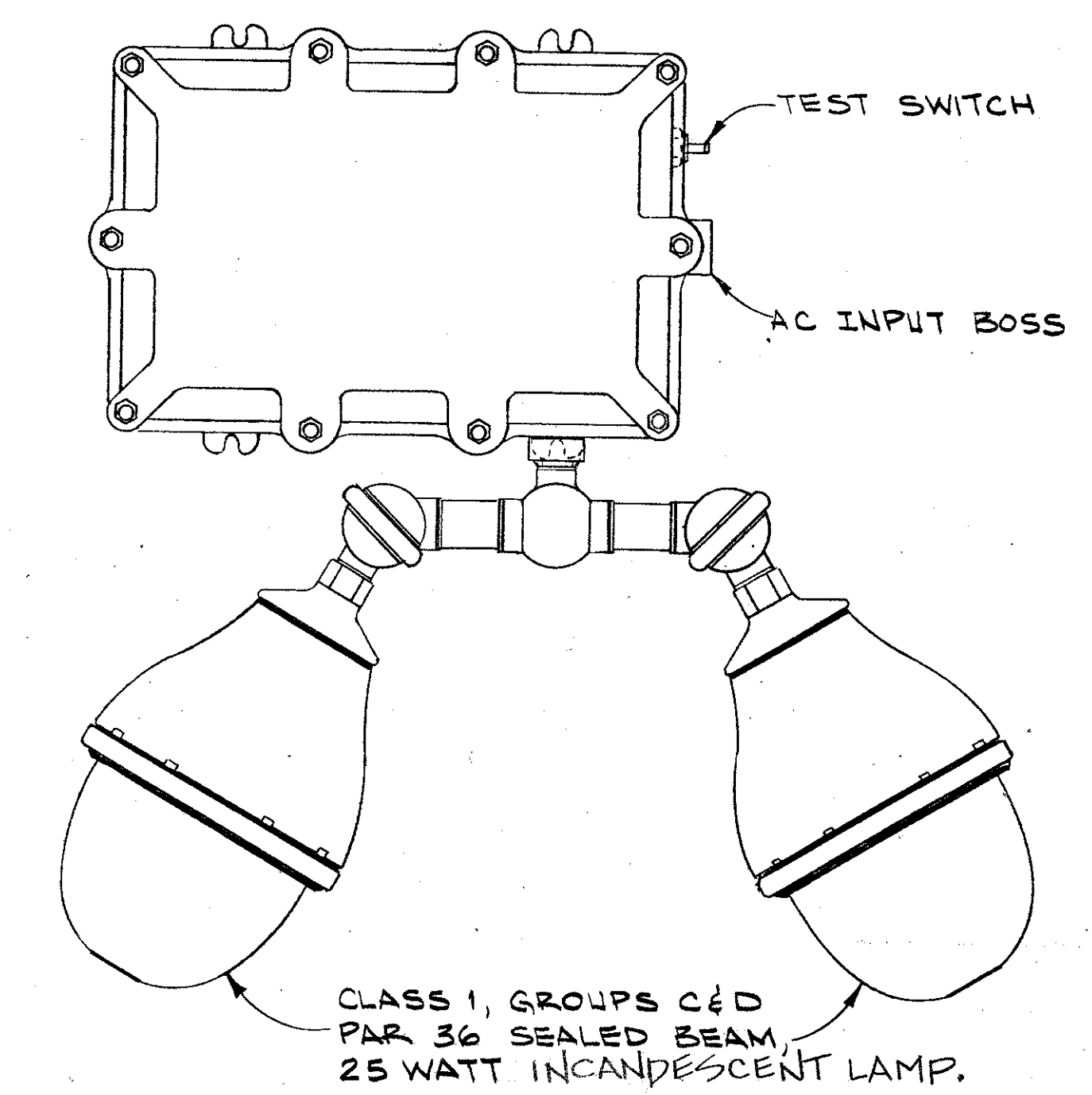


DRIVE REF. RODS IN STRAIGHT LINE FROM ROD BEING TESTED DO NOT MAKE TESTS IN RAINY OR FOGGY WEATHER SEE SPEC. FOR TEST PROCEDURE

GROUND ROD TEST
NOT TO SCALE

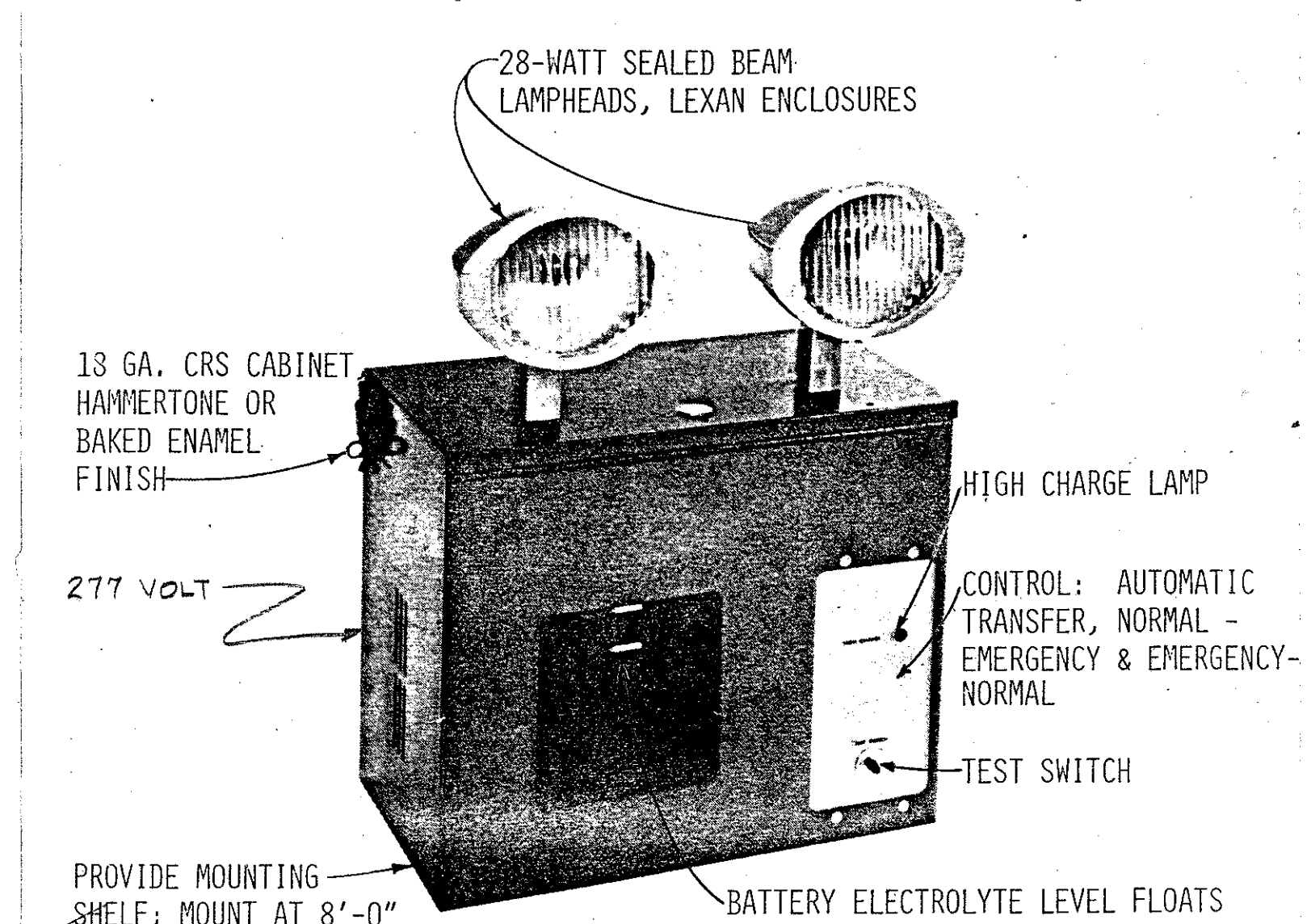
X = 50 FEET (MINIMUM) RODS SHALL BE EQUALLY SPACED.

AUTOMATIC EMERGENCY LIGHT, CAST ALUMINUM EXPLOSION PROOF FOR CLASS I, GROUPS C & D DIV. 1 HAZARD AREAS, DRY BATTERY OPERATED, SINGLE BATTERY, DOUBLE SWIVEL HEAD, 1/2 HOUR ILLUMINATION TO 5.25 V., WITH BATTERY CHARGER PROVIDING HIGH-RATE & TRICKLE CHARGE RATES, MAX. RECHARGE TIME 24 HRS.



FIXTURE SYMBOL "C"
NOT TO SCALE

BATTERY CHARGER: SOLID STATE, AUTOMATIC, CONSTANT POTENTIAL TYPE, OF CAPACITY TO RECHARGE FULLY IN 12 HOURS OR LESS. PROVIDE CORD SET FOR RECEPTACLE CONNECTION.



FIXTURE SYMBOL "D"
NOT TO SCALE

BATTERY: LEAD-ANTIMONY TYPE, 5-YEAR PRO RATA GUARANTEE, 220-WATTS CAPACITY FOR 1-1/2 HOURS TO 1.75 V.P.C.

REVISIONS			
LET	DESCRIPTION	PREP'D BY	DATE

ELECTRICAL SYMBOL SCHEDULE	
SYMBOL	DESCRIPTION
○	INCANDESCENT LIGHTING, FIXTURE, CEILING MTD.
○	INCANDESCENT LIGHTING, FIXTURE, BRACKET
□	FLUORESCENT LIGHTING FIXTURE
⊗	EMERGENCY LIGHT SET, 8'-0" A.F.F.
⊙	EXIT LIGHT
■	PANELBOARD
□	SAFETY SWITCH
\$	SINGLE POLE SWITCH, 48" A.F.F.
\$3	THREE-WAY SWITCH, 48" A.F.F.
⊕	DUPLEX RECEPTACLE, 16" A.F.F.
—	BRANCH CIRCUIT RACEWAY, IN WALL, CEILING.
- - -	BRANCH CIRCUIT RACEWAY, IN FLOOR.
- - -	BRANCH CIRCUIT RACEWAY, EXPOSED.
⊠	FIRE ALARM STATION, MANUAL PULL
⊠	FIRE ALARM BELL
▽	TELEPHONE OUTLET, 16" ABOVE FIN. FLOOR.
⊠	TRANSFORMER, PAD MTD. TYPE OR DRY TYPE. (SEE PLAN)
⊠	ELECTRIC MOTOR
⊠	PORCELAIN LAMPHOLDER WITH 100W.I.F. LAMP
⊠	SMOKE DETECTOR, IONIZATION TYPE.
⊠	WEATHER PROOF DUPLEX RECEPT., 16" A.F.F.
⊠	MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOADS.
⊠	EXPLOSION PROOF RECEPTACLES. SEE SCHEDULE, SHEET #23.
⊠	TRANSFORMER, DISTRIBUTION TYPE, POLE MOUNTED.
⊠	HEAT DETECTOR, COMBINATION FIXED TEMPERATURE, RATE-OF-RISE TYPE.

GENERAL NOTES

1. DO NOT SCALE DRAWINGS UNLESS DIMENSIONS ARE SHOWN. LOCATE OUTLETS AND EQUIPMENT AS OBVIOUSLY INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS.
2. MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE NO. 12 AWG.
3. ALL FUSES SHALL BE DUAL-ELEMENT TYPE.
4. BRANCH CKT. SIZES ARE AWG 12-1/2". UNLESS NOTED OTHERWISE. ALL CONDUIT FILL SHALL BE PER NEC. TABLE 3A UNLESS OTHERWISE INDICATED.
5. ALL CONDUITS FOR 400 HZ CIRCUITS SHALL BE RIGID ALUMINUM.
6. ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX.
7. ALL ELECTRICAL WORK SHALL COMPLY WITH N.E.C. ARTICLE 500 FOR CLASS I, DIV. 1, GROUPS C, D IN ROOMS 101, 102, 113, AND 114.

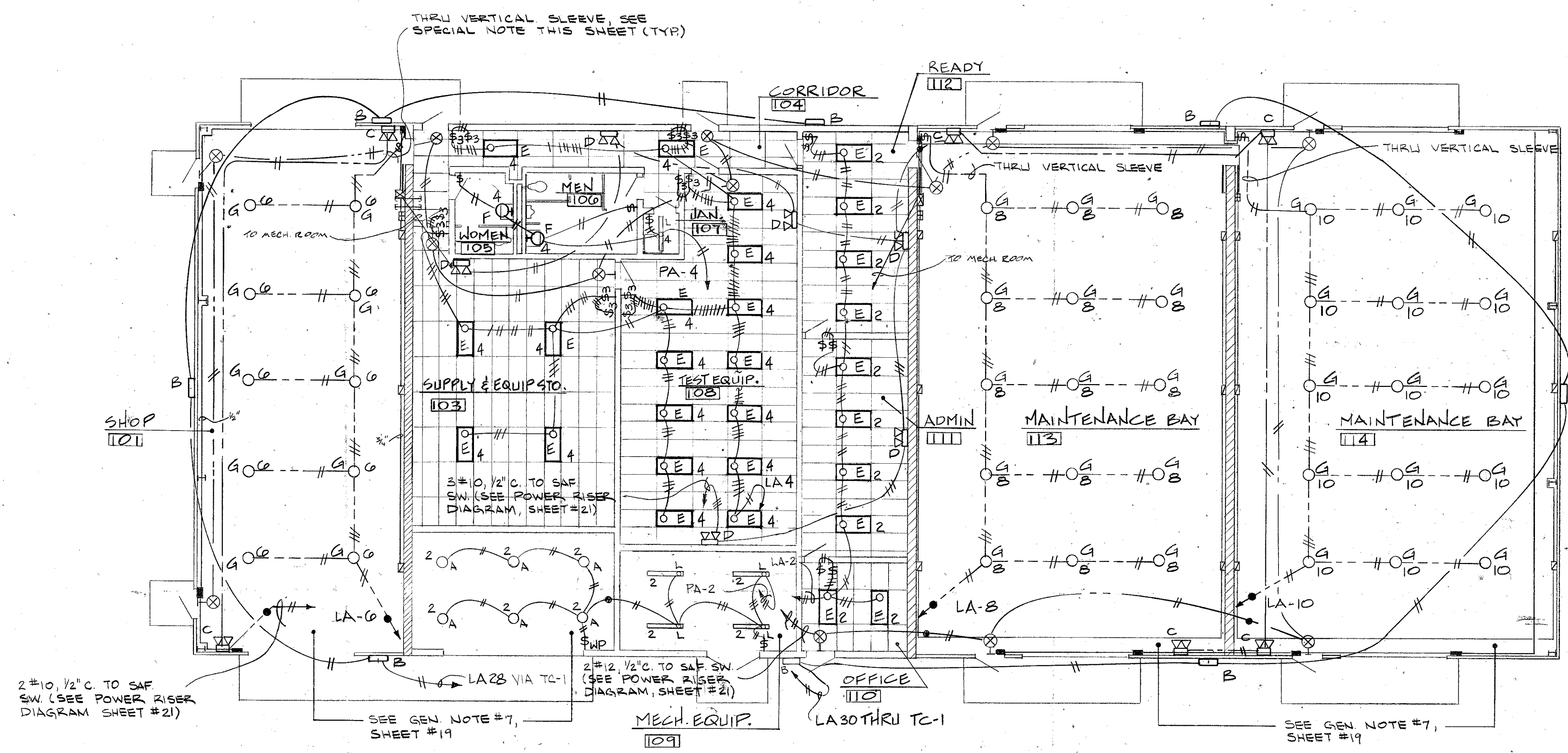


AS-BUILT

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DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
SHAW AIR FORCE BASE SOUTH CAROLINA	
HYDRAZINE FAC. & BLDG 1816	
ELECTRICAL NOTES, SYMBOLS & DETAILS	
DESIGN BY: W. H. WHITE, CH. ENGR. DATE: 4/10/80	SIZE: CODE IDENT. NO. NAVFAC DRAWING NO.
APPROVED BY: [Signature] DATE: 4/10/80	OFFICIAL IN CHARGE: 5071272
APPROVED BY: [Signature] DATE: 4/10/80	CONSTR. CONTR. NO. 1162461-80-C-0036
SCALE: AS NOTED	SHEET 19 OF 25

NOTE: SEE CRANE CLEARANCE DIAGRAM, SHEET #12, AND INSURE THAT NO LIGHT FIXTURES, CONDUIT OR OTHER ELECTRICAL WORK PROTRUDES BELOW CRANE OBSTRUCTION LINE.

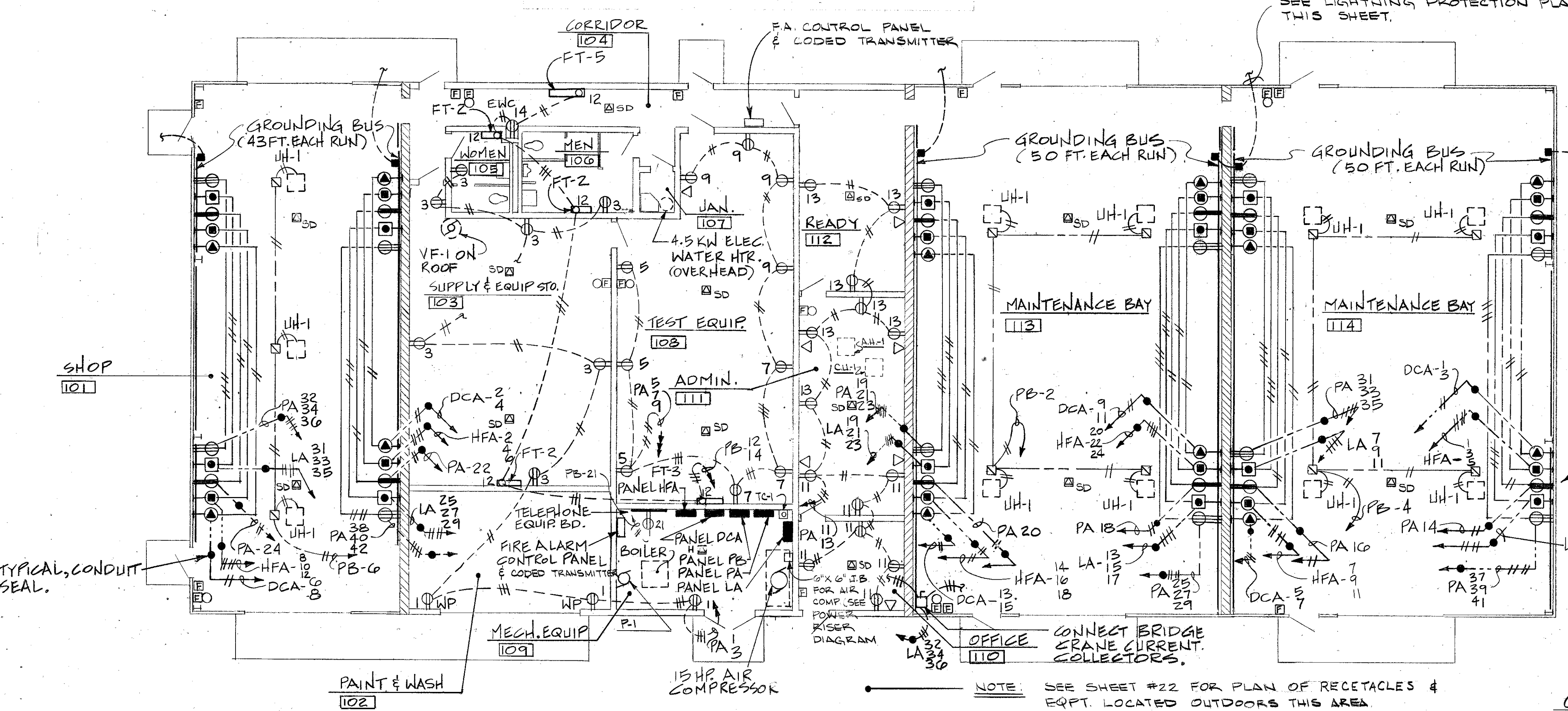
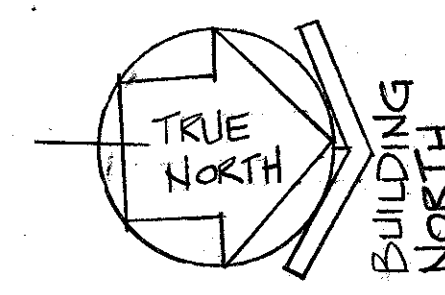
REVISIONS			
LET	DESCRIPTION	PREP'D BY	DATE - APPROVED



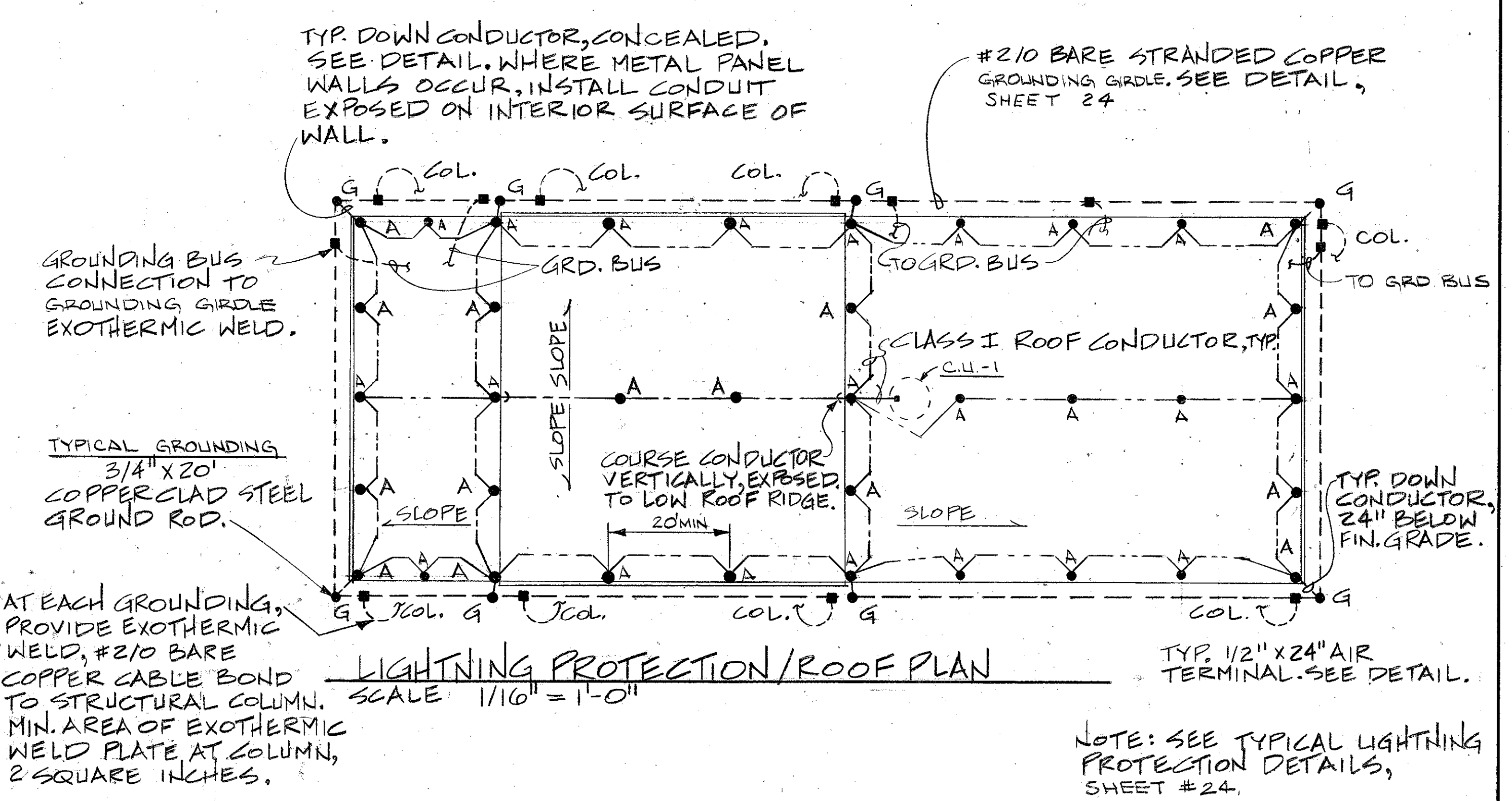
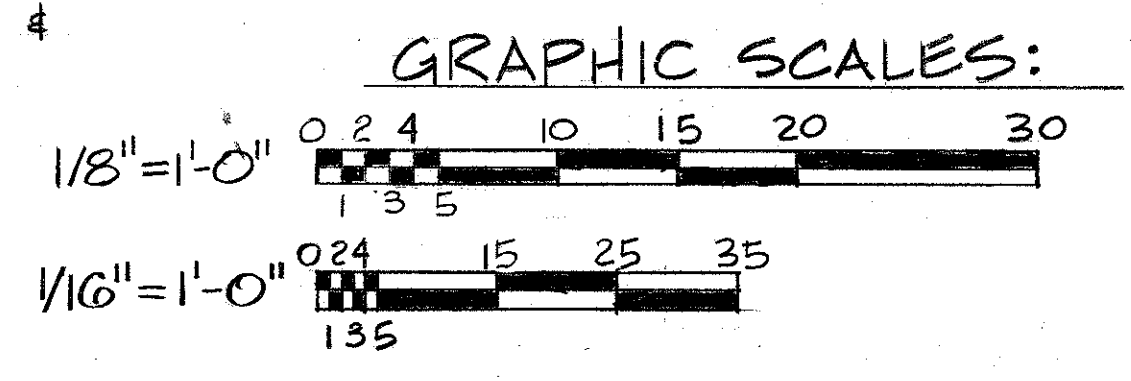
MISSILE ASSEMBLY BLDG. #1816 - LIGHTING PLAN
SCALE: 1/8" = 1'-0"

SPECIAL NOTE: WALLS DENOTED WITH HATCH ON THIS SHEET ARE POURED-IN-PLACE CONCRETE WITH HAUNCH FOR CRANE RAIL. SEE DETAILS, SHEET 13. INSTALL CONDUIT PASSING THRU WALLS BEFORE CONCRETE IS PLACED AND MAINTAIN TIGHT SEAL BETWEEN CONCRETE AND CONDUIT. CONTRACTOR IS CAUTIONED TO NOTE JOIST ELEVATION DIFFERENCES: SEE SHEETS 12 & 13.
SEE DETAIL, SHEET 13, FOR SLEEVES THRU HAUNCH FOR SWITCH LEG CONDUITS.

- LEGEND (Alarm System)
- Control Unit
 - Transceiver
 - Receptor
 - Balanced Magnetic Switch

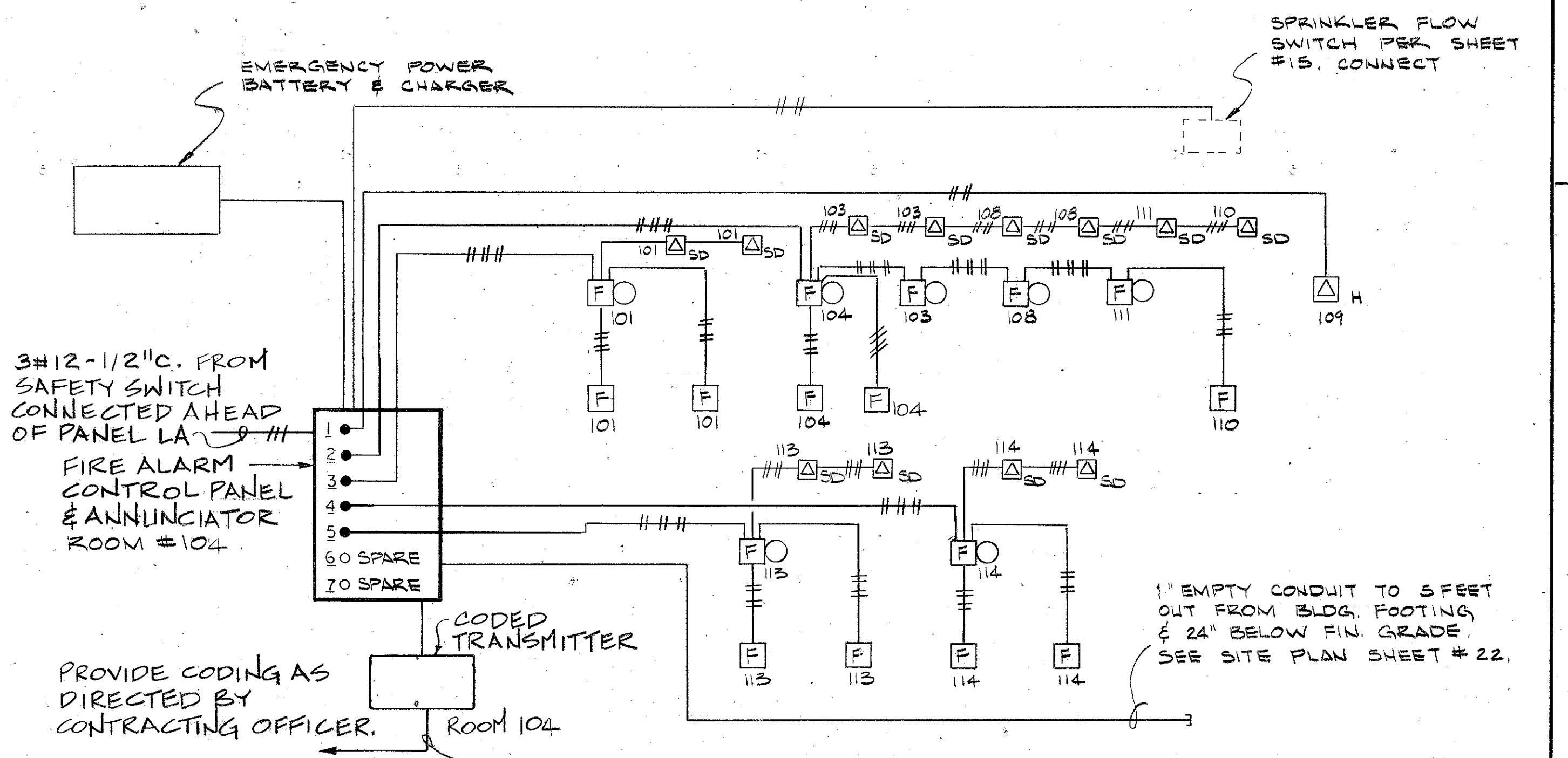


MISSILE ASSEMBLY BLDG. #1816 - POWER PLAN
SCALE: 1/8" = 1'-0"



LIGHTING PROTECTION/ROOF PLAN
SCALE: 1/16" = 1'-0"

NOTE: SEE TYPICAL LIGHTING PROTECTION DETAILS, SHEET #24.



FIRE ALARM RISER DIAGRAM
NOT TO SCALE

REFER TO SHEET #23 FOR EXPLOSION PROOF RECEPTACLE SCHEDULE.

NOTE: USE #10 COPPER CONDUCTORS & 3/4" C. FOR 30 AMP CIRCUITS. USE #6 COPPER CONDUCTORS & 1" C. FOR 50 AMP CIRCUITS.

NOTE: SEE SHEET #22 FOR PLAN OF RECEPTACLES & EQPT. LOCATED OUTDOORS THIS AREA.



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DESIGN PORTER/PORTER/WHITE SUPERVISOR SHAW DATE 4/11/81		SHAW AIR FORCE BASE SOUTH CAROLINA	
FIRM REVIEWER (TITLE) SOUTHERN DIVISION		HYDRAZINE FAC. & BLDG 1816 MISSILE ASSEMBLY BLDG #1816 ELECTRICAL PLANS.	
APPROVED OFFICER IN CHARGE DATE 4/12/81		SIZE CODE IDENT NO. NAVFAC DRAWING NO. F 80091 5071273	
APPROVED RFD FOR COMMANDER, NAVFAC		CONSTR CONTR NO. UG2467-80-C-0026 SCALE AS NOTED SPEC 06-80-0026 SHEET 20 OF 25	

PANEL SCHEDULE LA Room 109									
277/480V, 3 PH, 4W, 60 HZ, 400A. MAIN CKT. BREAKER (CLASS 21A)									
CKT NO	LOAD DESCRIPTION	BREAKERS	KVA	BREAKERS	LOAD DESCRIPTION	CKT NO	LOAD DESCRIPTION	BREAKERS	KVA
NO	TYPE	ROOM NUMBER	POLE AMP CL	POLE AMP CL	ROOM NUMBER	TYPE	NO	TYPE	ROOM NUMBER
1	RECEPT	114	3 30 13b	2.0	1 20 12c	110, 111, 112	LTS	2	
3	"	"		2.3	1 20 12c	103, 104, 108	LTS	4	
5	"	"		2.25	1 20 12c	101	LTS	6	
7	RECEPT	114	3 30 13b	2.38	1 20 12c	113	LTS	8	
9	"	"		2.38	1 20 12c	114	LTS	10	
11	"	"		2.25	3 100 21a	109	TRNK TA	12	
13	RECEPT	113	3 30 13b	2.25				14	
15	"	"		2.25				16	
17	"	"		2.24	3 100 21a	109	MG SET	18	
19	RECEPT	113	3 30 13b	2.24				20	
21	"	"		2.24				22	
23	"	"		2.6	2 60 13b	109	8-9	24	
25	RECEPT	101	3 30 13b	2.6				26	
27	"	"		2.2	1 20 12c	OUTSIDE	LTS	28	
29	"	"		2.2	1 20 12c	OUTSIDE	LTS	30	
31	RECEPT	101	3 30 13b	2.2				32	
33	"	"		2.2				34	
35	"	"		2.2				36	
37	AIR COMP	109	3 40 13b	5.8				38	
39	"	"		5.8				40	
41	"	"		5.8				42	

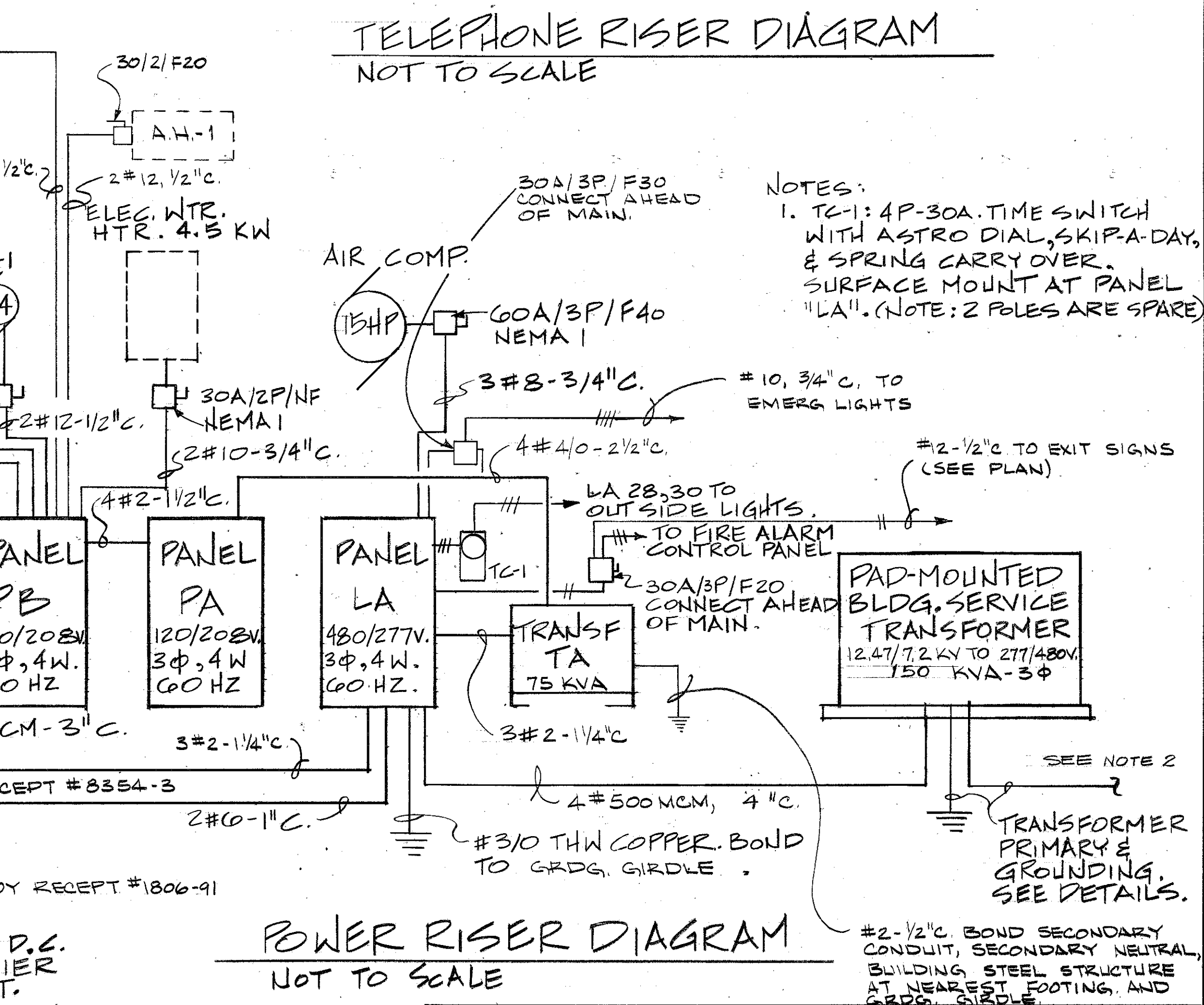
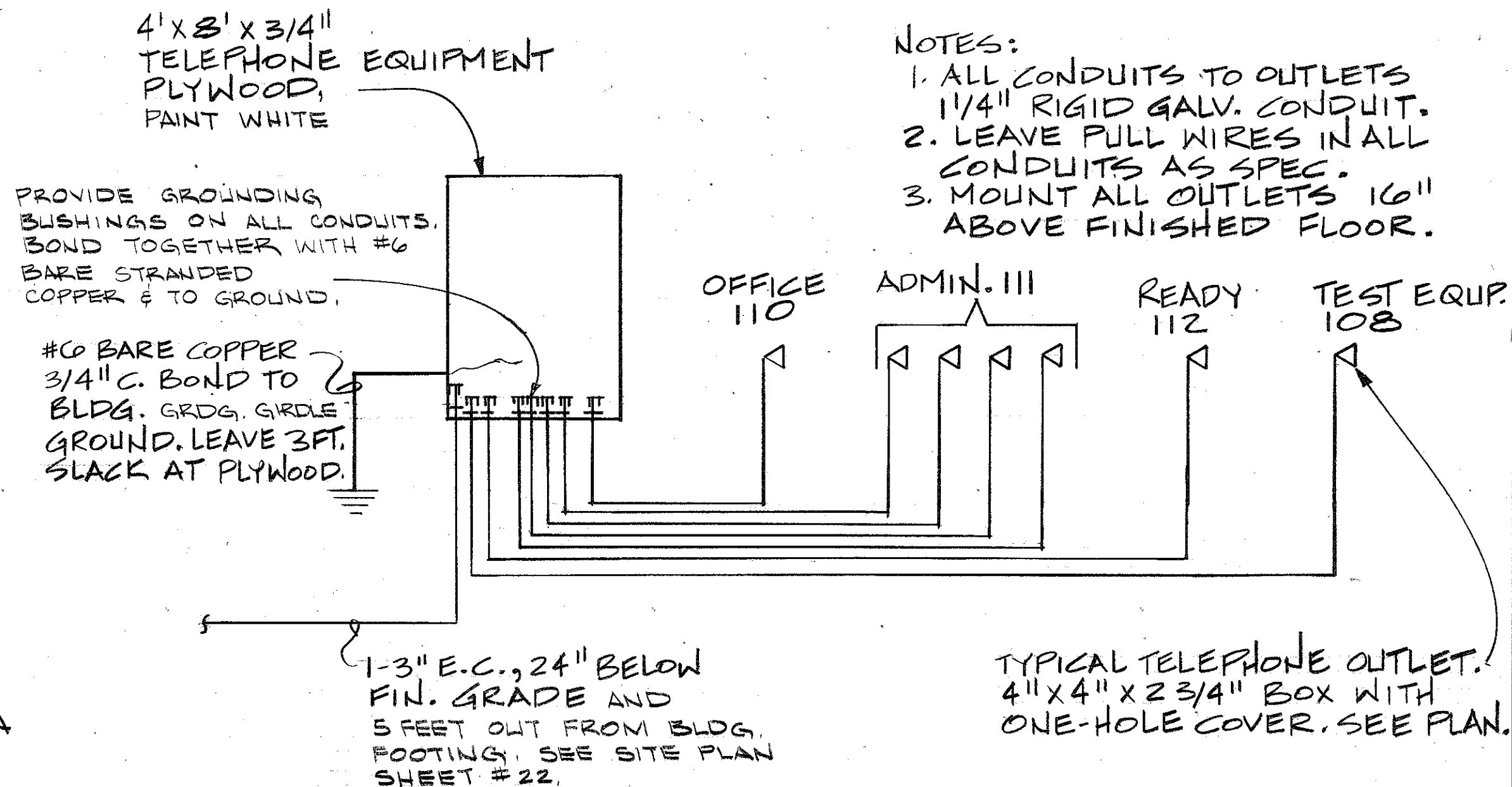
CONNECTED LOAD=303.5 KVA DEMAND=212.5 KVA

PANEL SCHEDULE PA Room 109									
120/208V, 3 PH, 4W, 60 HZ, 225 A. MAIN CKT. BRKR. (CLASS 14b)									
CKT NO	LOAD DESCRIPTION	BREAKERS	KVA	BREAKERS	LOAD DESCRIPTION	CKT NO	LOAD DESCRIPTION	BREAKERS	KVA
NO	TYPE	ROOM NUMBER	POLE AMP CL	POLE AMP CL	ROOM NUMBER	TYPE	NO	TYPE	ROOM NUMBER
1	RECEPT	102, 109	1 20 10a	.6	1 20 10a	102, 109	LTS	2	
3	RECEPT	103, 105, 106	1 20 10a	.4	1 20 10a	105, 106, 107	LTS	4	
5	RECEPT	108	1 20 10a	.6		SPARE		6	
7	"	108	1 20 10a	.6				8	
9	"	108	1 20 10a	.8				10	
11	RECEPT	110, 111	1 20 10a	.4				12	
13	"	111, 112	1 20 10a	.4				14	
15	SPARE		1 20 10a	.4				16	
17	SPARE		1 20 10a	.4				18	
19	RECEPT	113	3 30 10b	2.4	1 20 10a	113	RECEPT	20	
21	"			2.4	1 20 10a	101	RECEPT	22	
23	"			2.4	1 20 10a	101	RECEPT	24	
25	RECEPT	113	3 30 10b	2.6	3 100 10a	109	PANEL PB	26	
27	"			2.6				28	
29	"			2.6				30	
31	RECEPT	114	3 30 10b	2.2	3 30 10b	101	RECEPT	32	
33	"			2.2				34	
35	"			2.2				36	
37	RECEPT	114	3 30 10b	2.2	3 30 10b	101	RECEPT	38	
39	"			2.2				40	
41	"			2.2				42	

CONNECTED LOAD=67.10 KVA DEMAND=53.7 KVA

PANEL SCHEDULE PB Room 109									
120/208V, 3 PH, 4W, 60 HZ, 100 A. MAIN LGGS ONLY									
CKT NO	LOAD DESCRIPTION	BREAKERS	KVA	BREAKERS	LOAD DESCRIPTION	CKT NO	LOAD DESCRIPTION	BREAKERS	KVA
NO	TYPE	ROOM NUMBER	POLE AMP CL	POLE AMP CL	ROOM NUMBER	TYPE	NO	TYPE	ROOM NUMBER
1	CU-1 (ON ROOF)		2 30 10b	1.6	1 20 10a	113	UH-1	2	
3	"			1.0	1 20 10a	114	UH-1	4	
5	AH-1 (ABOVE CEILING)		2 20 10b	.3	1 20 10a	101	UH-1	6	
7	"			.3	1 20 10a	109	BOILER	8	
9	SPARE		1 20 10a	.7	1 20 10a	ON ROOF	VF-1	10	
11	SPARE		1 20 10a	1.0	1 20 10a	103, 104, 105	FT'S	12	
13	P-1	109	2 30 10b	.8	1 20 10a	104	ENC	14	
15	"			.8	1 20 10a	SPARE		16	
17	BHWH	107	2 30 10b	2.25	1 20 10a			18	
19	"			2.25	1 20 10a			20	
21	TEL PANEL	109	1 20 10a	1.6		SPACE ONLY		22	
23	AIR FUTURE		3 40 10b					24	
25	COMP. BY							26	
27	"	GOV'T						28	
29	SPACE ONLY							30	
31								32	
33								34	
35								36	
37								38	
39								40	
41								42	

CONNECTED LOAD=19.6 KVA DEMAND=14.0 KVA



PANEL SCHEDULE DCA									
28 V. D.C. 400A. MAIN CKT BRKR. (CLASS 14b)									
CKT NO	LOAD DESCRIPTION	BREAKERS	KVA	BREAKERS	LOAD DESCRIPTION	CKT NO	LOAD DESCRIPTION	BREAKERS	KVA
NO	TYPE	ROOM NUMBER	POLE AMP CL	POLE AMP CL	ROOM NUMBER	TYPE	NO	TYPE	ROOM NUMBER
1	RECEPT	114	2 30 10b	.7	2 30 10b	101	RECEPT	2	
3	"	"			"	"	"	4	
5	RECEPT	114	2 30 10b	.7	2 30 10b	"	RECEPT	6	
7	"	"			"	"	"	8	
9	RECEPT	113	2 30 10b	.7	1 20 10a	SPARE		10	
11	"	"			1 20 10a			12	
13	RECEPT	113	2 30 10b	.7	1 20 10a			14	
15	"	"			1 20 10a			16	
17	SPACE ONLY				SPACE ONLY			18	
19								20	
21								22	
23								24	
25								26	
27								28	
29								30	
31								32	
33								34	
35								36	
37								38	
39								40	
41								42	

CONNECTED LOAD=4.20 KW DEMAND=2.1 KW

PANEL SCHEDULE HFA Room 109									
120/208V, 3 PH, 4W, 400 HZ, 225 A. MAIN CKT. BRKR. (CLASS 14b)									
CKT NO	LOAD DESCRIPTION	BREAKERS	KVA	BREAKERS	LOAD DESCRIPTION	CKT NO	LOAD DESCRIPTION	BREAKERS	KVA
NO	TYPE	ROOM NUMBER	POLE AMP CL	POLE AMP CL	ROOM NUMBER	TYPE	NO	TYPE	ROOM NUMBER
1	RECEPT	114	3 50 10b	1.6	3 50 10b	101	RECEPT	2	
3	"	"		1.6	1.6		"	4	
5	"	"		1.6	1.6		"	6	
7	RECEPT	114	3 50 10b	1.6	3 50 10b	101	RECEPT	8	
9	"	"		1.6	1.6		"	10	
11	"	"		1.6	1.6		"	12	
13	SPARE		1 20 10a	1.6	3 50 10b	113	RECEPT	14	
15	SPARE		1 20 10a	1.6			"	16	
17	SPARE		1 20 10a	1.6			"	18	
19	SPARE		1 20 10a	1.6	3 50 10b	113	RECEPT	20	
21	SPARE		1 20 10a	1.6			"	22	
23	SPARE		1 20 10a	1.6			"	24	
25								26	
27								28	
29								30	
31								32	
33								34	
35								36	
37								38	
39								40	
41								42	

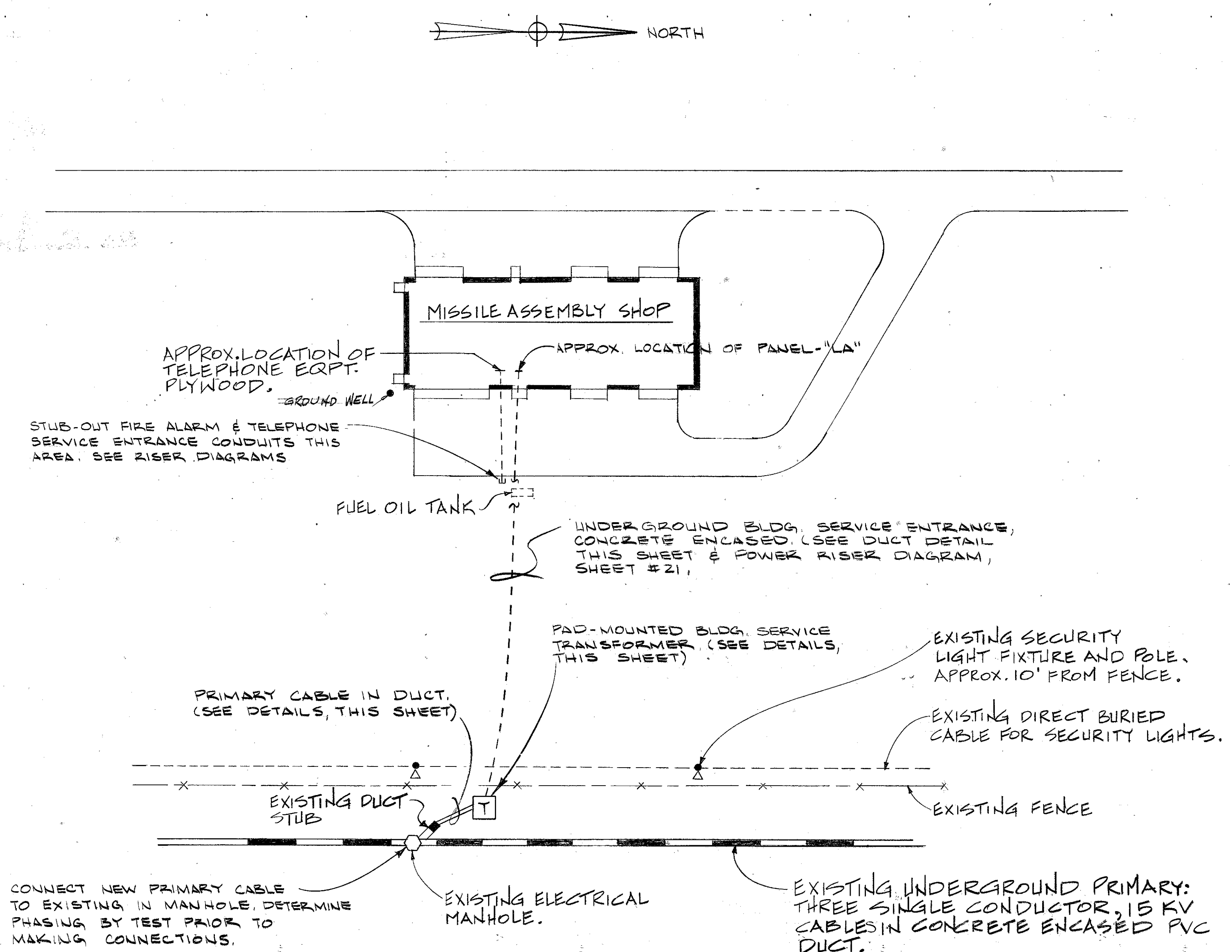
CONNECTED LOAD=28.80 KVA DEMAND=9.6 KVA

NOTE: ALL BREAKERS IN PANEL HFA SHALL BE FULL RATED AT 400 HZ FOR AMPACITIES INDICATED.

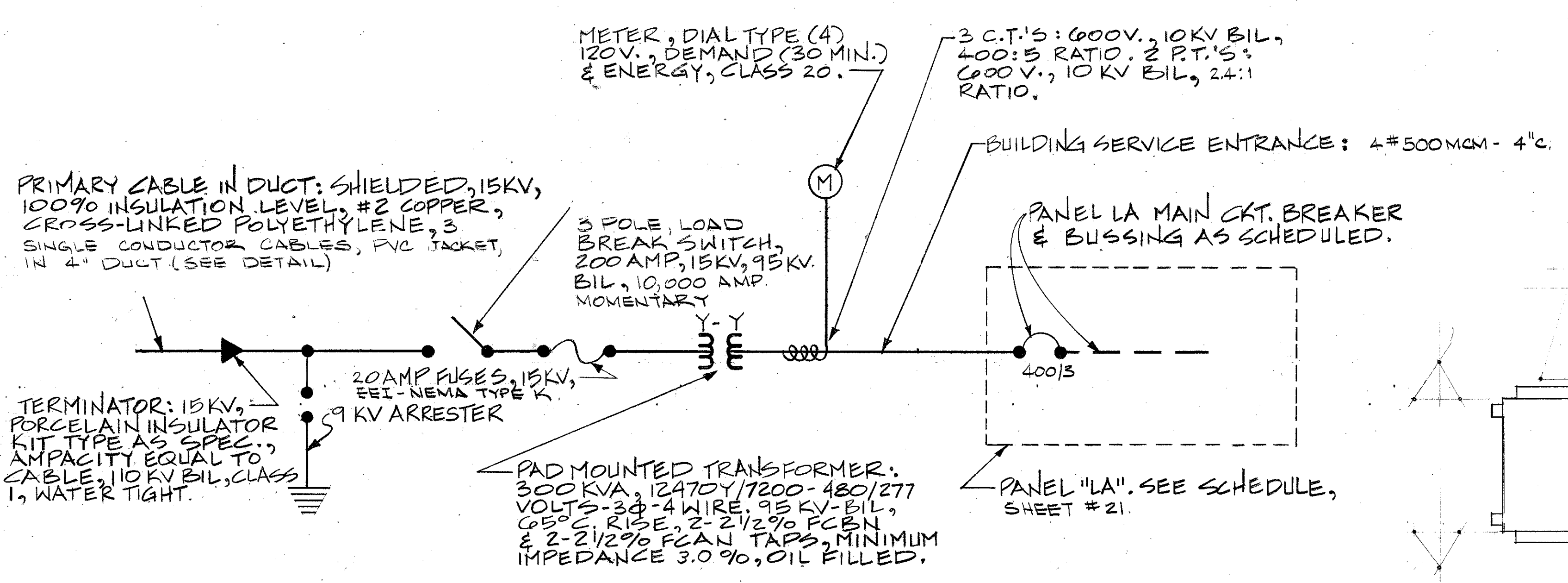
NOTE: PROVIDE INPUT & OUTPUT RECEPTACLES FOR MG SET & RECTIFIER. THE GOVERNMENT WILL PROVIDE EQUIPMENT IN PLACE & CONNECT. PROVIDE CONC MOUNTING PADS FOR EQUIPMENT. PER DETAIL ON SHEET #22, SIZES 48"W X 72"L. FOR MG SET & 48"W X 48" FOR RECTIFIER.

NOTE 2: PROVIDE APPROX. 550 L.F. OF #2 WIRE TO SERVE AS NEUTRAL IN PRIMARY CIRCUIT BETWEEN 150 KVA TRANSFORMER AND STATIC WIRE OF EXISTING POWER WHICH FEEDS PRIMARY CIRCUIT.

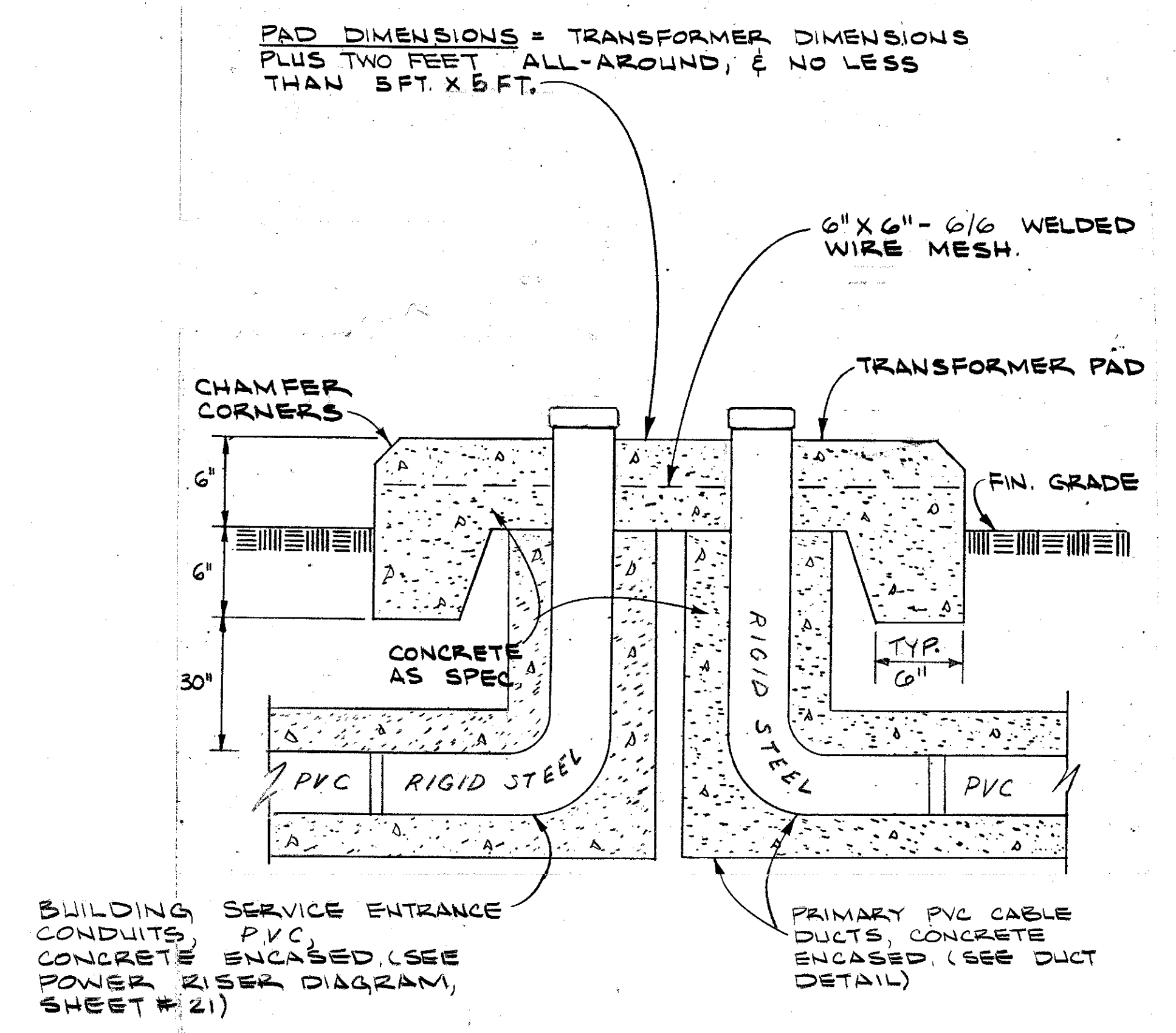
McNair, Gordon, Johnson & Karasiewicz ARCHITECTS-ENGINEERS-PLANNERS P.O. BOX 64 COLUMBIA, SC 29202		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
DESIGNED BY: McNair, Gordon, Johnson & Karasiewicz CHECKED BY: McNair, Gordon, Johnson & Karasiewicz DATE: 7/16/80		SHAW AIR FORCE BASE SOUTH CAROLINA	
SUBMITTED BY: McNair, Gordon, Johnson & Karasiewicz DATE: 7/16/80		HYDRAZINE FAC. & BLDG 1816	
FIRM MEMBER TITLE: SOUTHERN DIVISION		MISSILE ASSEMBLY BLDG # 1810	
P.O. BOX: 64		ELECTRICAL SCHEDULES & RISERS	
APPROVED: [Signature]	DATE: 7/16/80	SIZE: F	CODE IDENT NO: 5071274
OFFICER IN CHARGE: [Signature]	DATE: 7/16/80	80091	CONSTR CONTR NO: 1162467-80-C-0026
APPROVED: [Signature]	DATE: 7/16/80	SCALE: AS NOTED	SHEET 21 OF 25



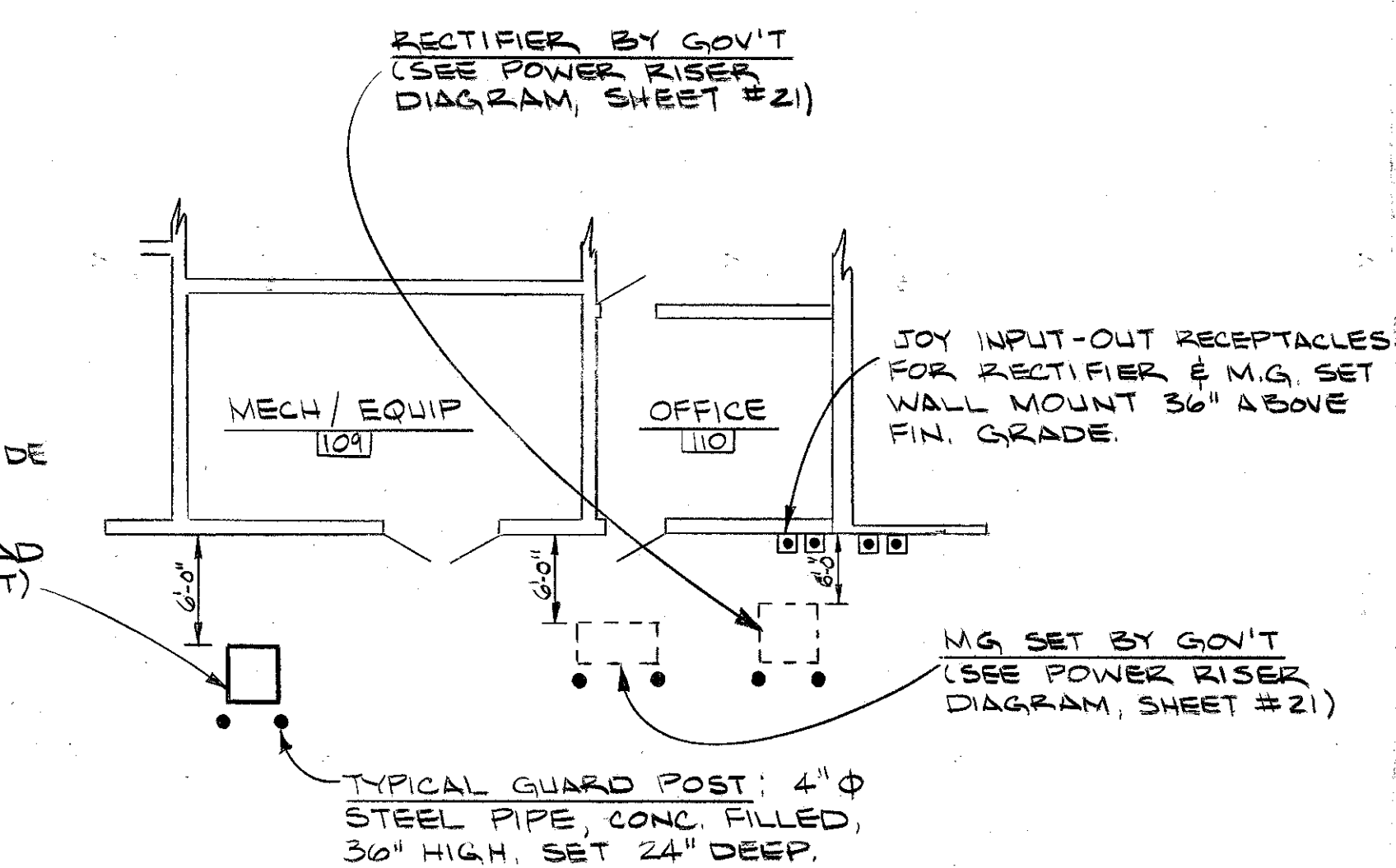
ELECTRICAL SITE PLAN
SCALE: 1" = 40'-0"



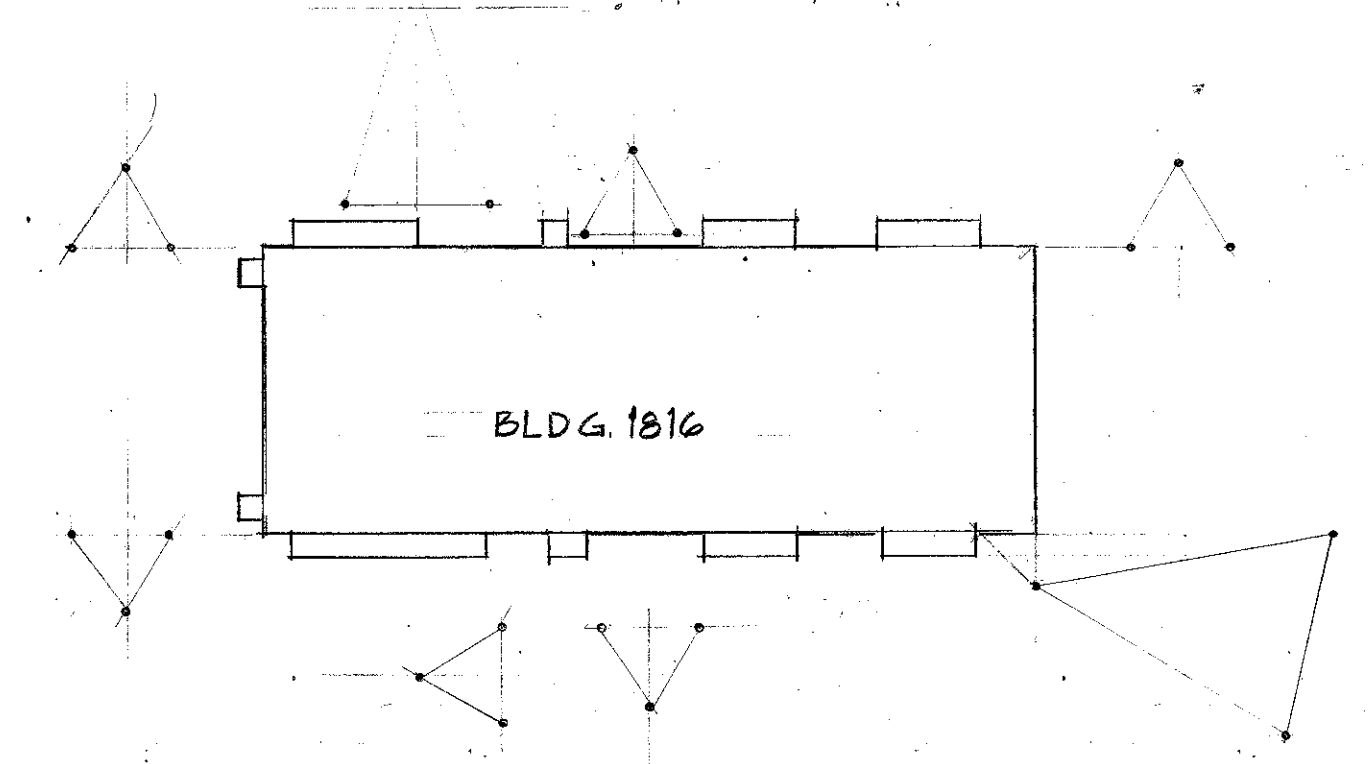
MISSILE ASSEMBLY BUILDING-SINGLE LINE DIAGRAM
NOT TO SCALE



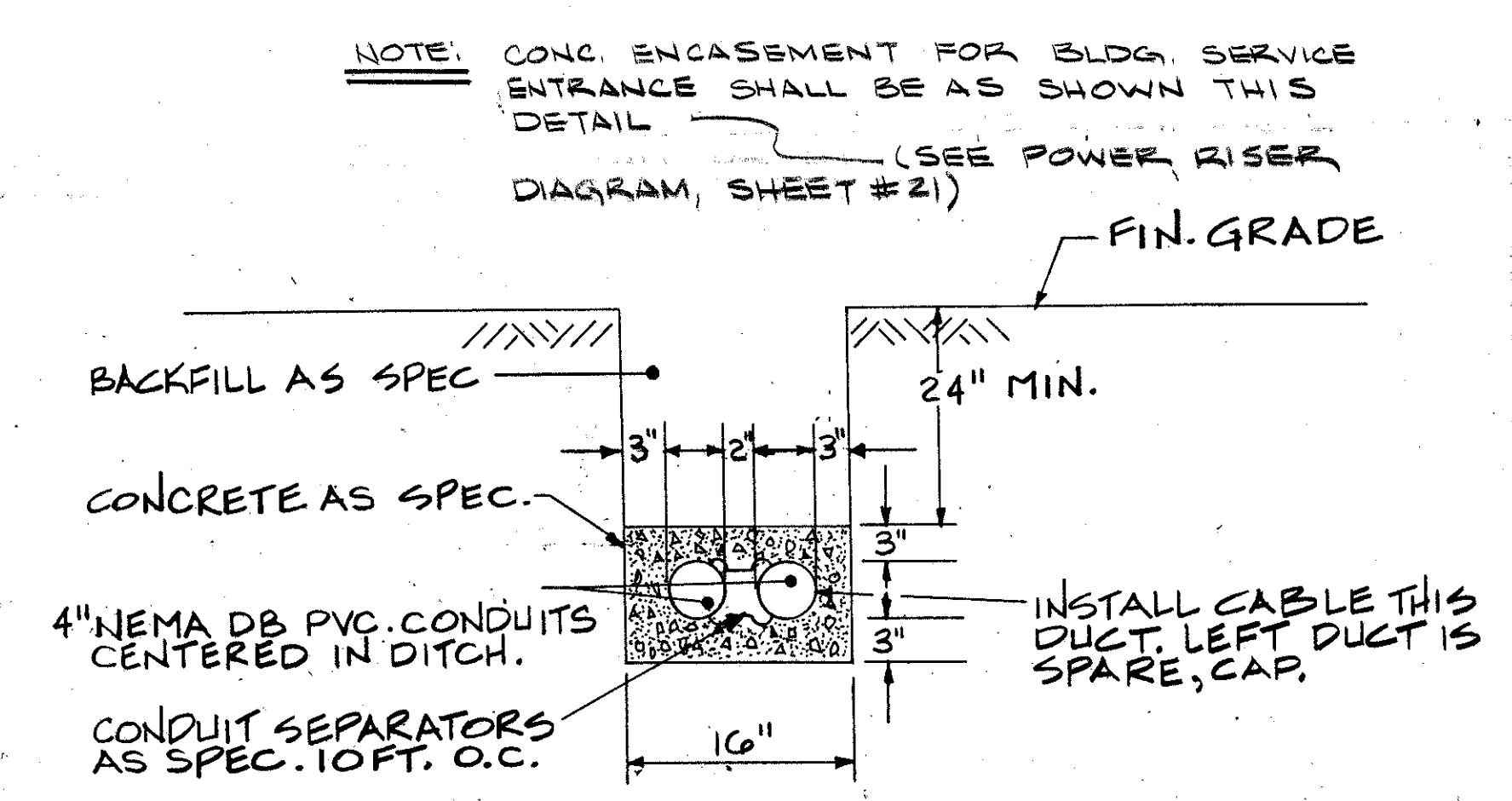
BUILDING SERVICE TRANSFORMER PAD
NOT TO SCALE



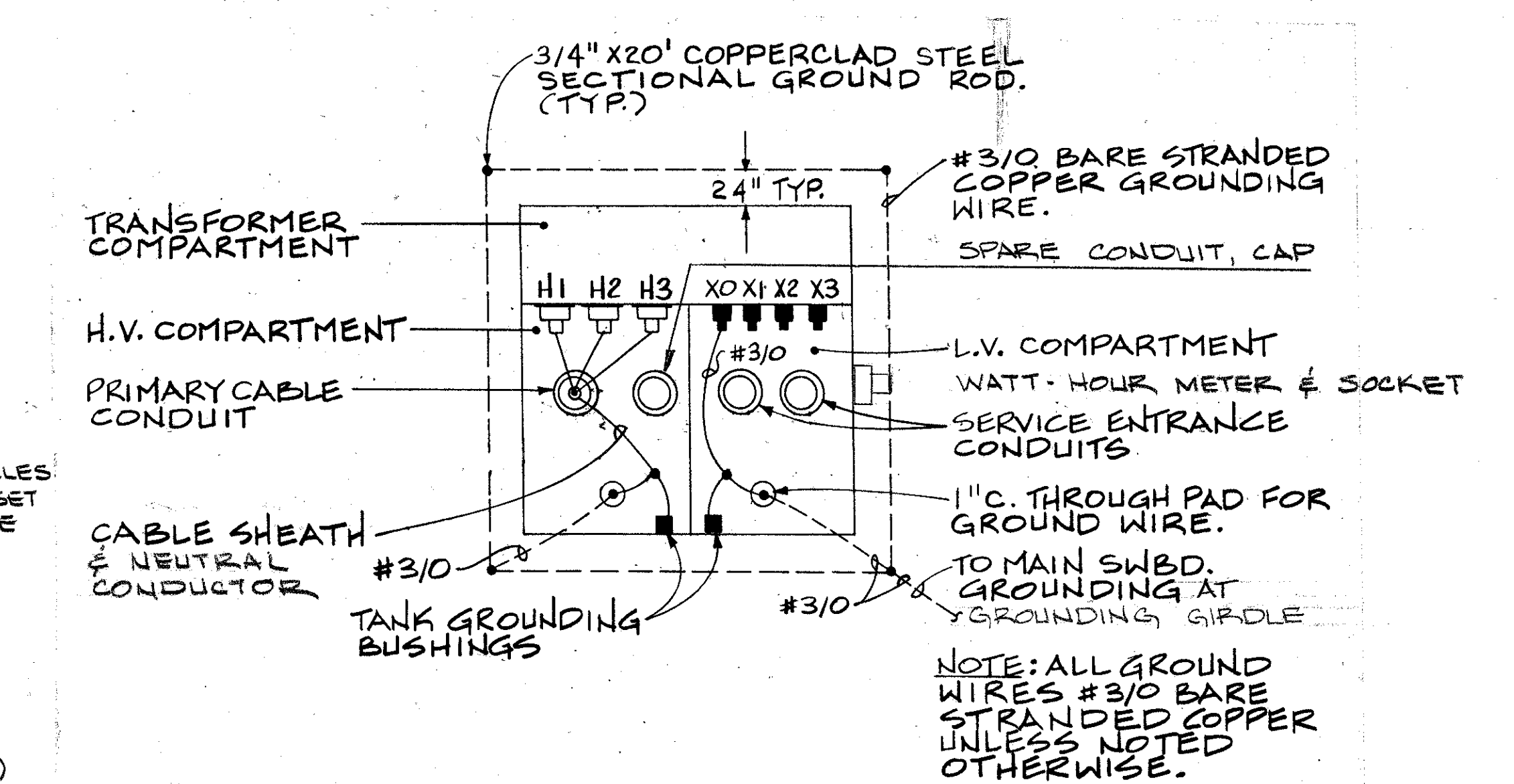
PARTIAL PLAN- ELECTRICAL EQUIPMENT (EAST SIDE OF BUILDING)
SCALE 1/8" = 1'-0"



ADDITIONAL GROUND RODS
SCALE 1" = 40'



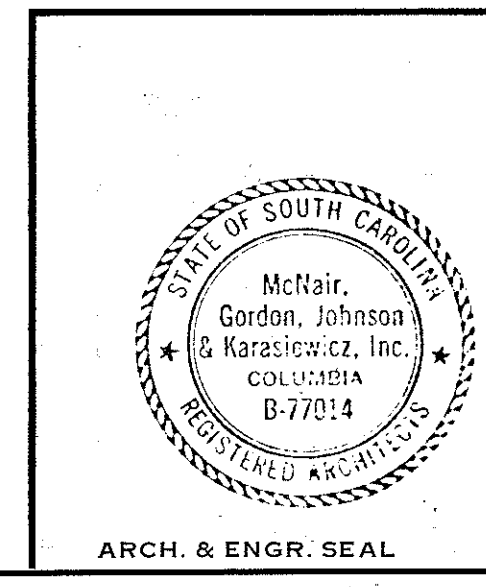
CABLE DUCT FOR PRIMARY POWER CABLE
NOT TO SCALE



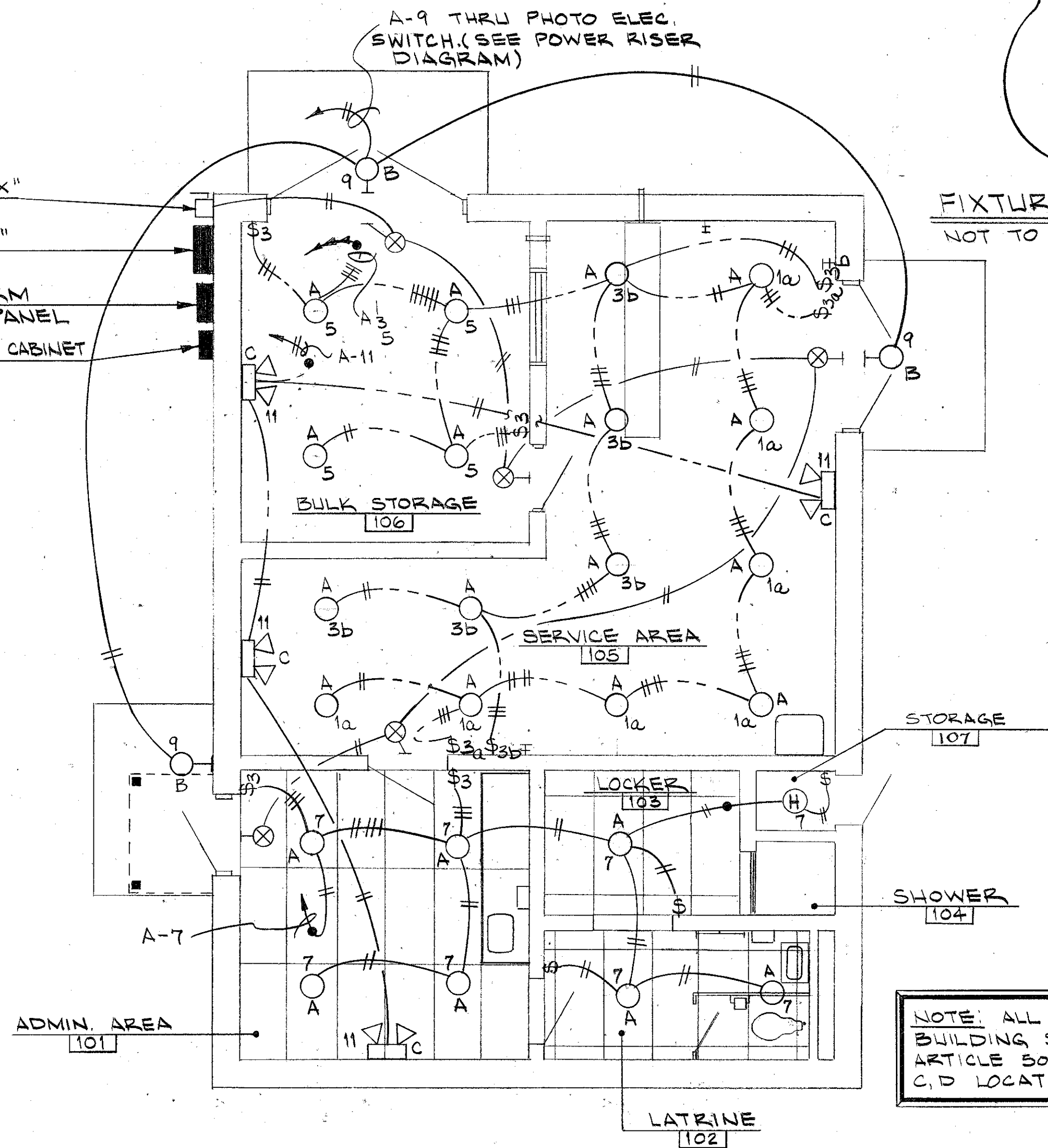
BUILDING SERVICE TRANSFORMER GROUNDING PLAN
NOT TO SCALE

REVISIONS		PREP'D BY	DATE	APPROVED
LET	DESCRIPTION			

McNAIR, GORDON, JOHNSON & KARASIEWICZ ARCHITECTS - ENGINEERS - PLANNERS P.O. BOX 84 COLUMBIA, SC 29202		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLOTTE, S.C.		
DESIGN BY: McNAIR, GORDON, JOHNSON & KARASIEWICZ	CH. ENGR: WHITE	SHAW AIR FORCE BASE	SOUTH CAROLINA	
SUPV: WHITE	DATE: 1/10/80	HYDRAZINE FAC. & BLDG 1816		
SUBMITTER: McNAIR, GORDON, JOHNSON & KARASIEWICZ	DATE: 1/10/80	MISSILE ASSEMBLY BLDG # 1816		
DESIGNER: McNAIR, GORDON, JOHNSON & KARASIEWICZ	DATE: 1/10/80	ELECTRICAL SITE PLAN & DETAILS		
OFFICER IN CHARGE: McNAIR, GORDON, JOHNSON & KARASIEWICZ	DATE: 1/10/80	SIZE: F	CODE IDENT NO: 80091	NAVFAC DRAWING NO: 5071275
APPROVED: C.T. [Signature]	DATE: 1/10/80	SCALE: AS NOTED	CONSTR CONTR NO: 1162467-80-C-0026	SHEET 22 OF 25

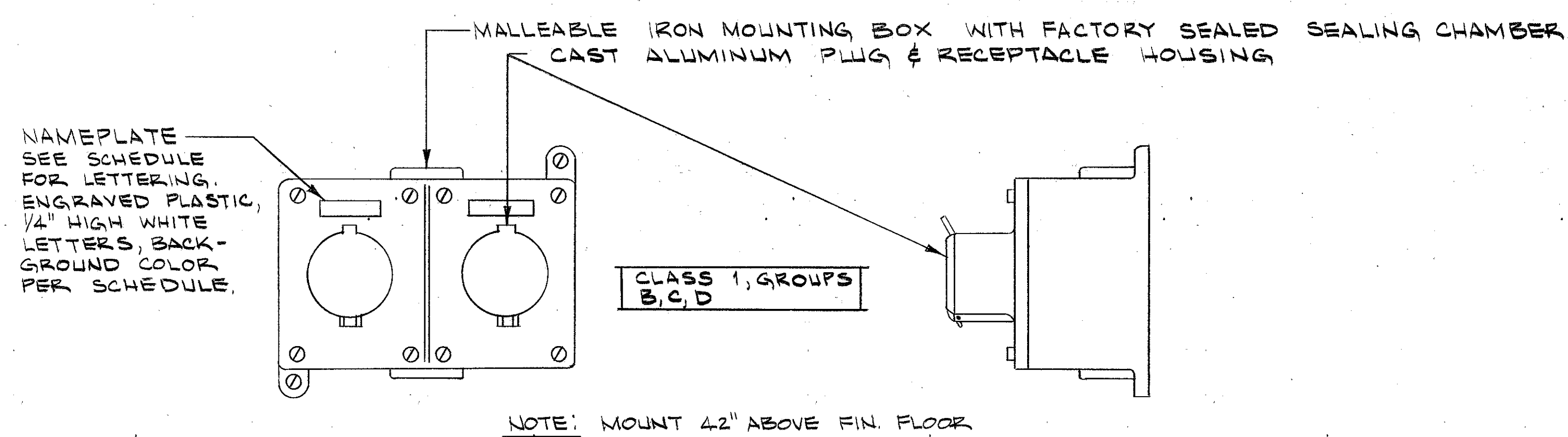


SWITCH - "X"
FIRE ALARM
CONTROL PANEL
TELEPHONE CABINET



HYDRAZINE FACILITY - LIGHTING PLAN 1619
SCALE: 1/4" = 1'-0"

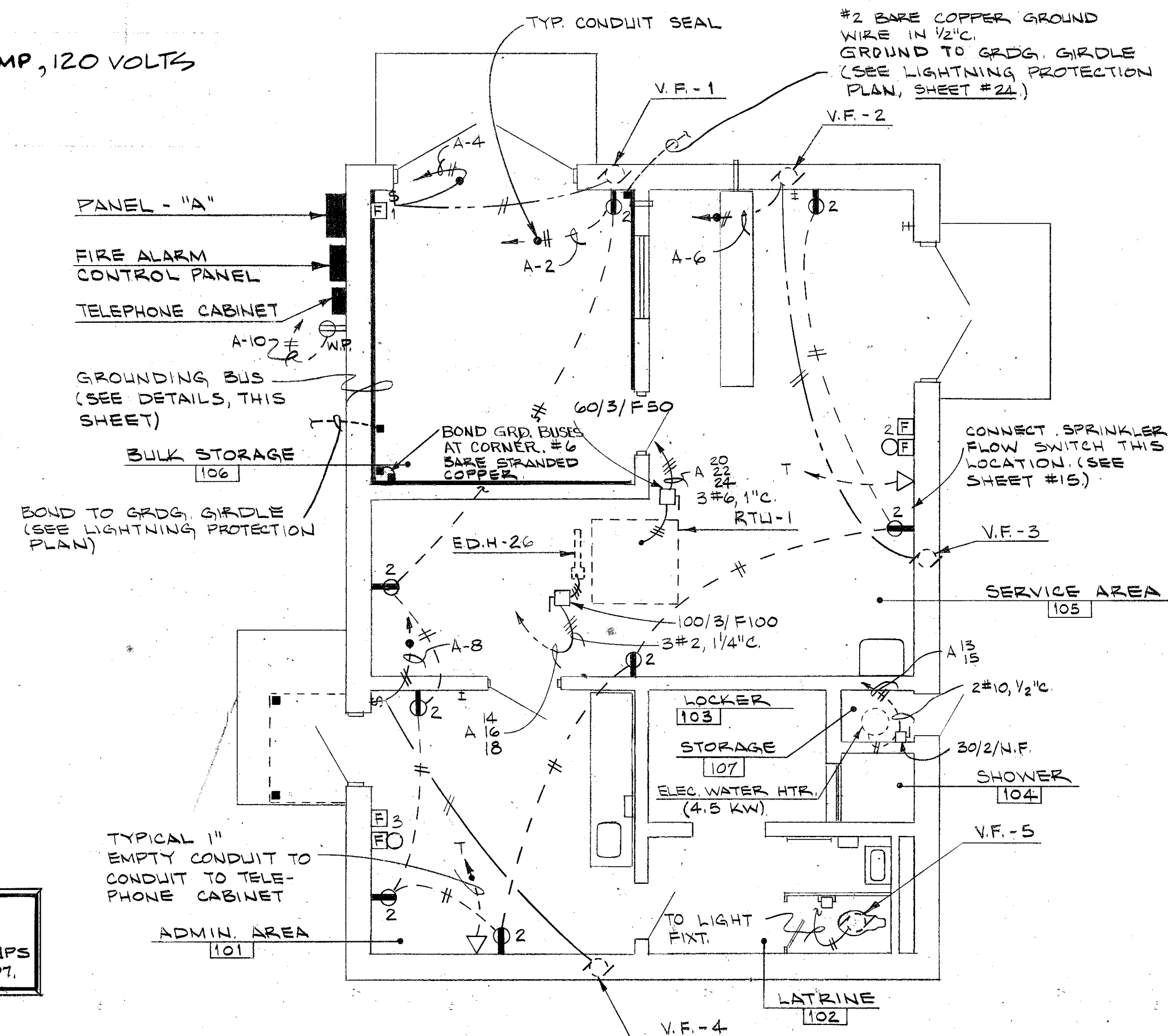
SCHEDULE - EXPLOSION PROOF RECEPTACLES					
SYMBOL	AMP.	VOLTS	PHASE & WIRES	FREQ. - UENCY	NAMEPLATE
					COLOR LETTERING
	30	28	2 WIRES	DC	BLUE 28 VOLTS - DC
	50	120/208	3 PHASE 4 WIRES	400 HZ	YELLOW 120/208 VOLTS - 3 PHASE - 4 WIRE - 400 HERTZ
	20	120	2 WIRES	60 HZ	BLACK 120 VOLTS
	30	277/480	3 PHASE 4 WIRES	60 HZ	RED 277/480 VOLTS - 3 PHASE - 4 WIRE - 60 HERTZ
	30	120/208	3 PHASE 4 WIRES	60 HZ	BROWN OR GOLD 120/208 VOLTS - 3 PHASE - 4 WIRE - 60 HERTZ



EXPLOSION-PROOF RECEPTACLE FOR MISSILE
ASSEMBLY & HYDRAZINE BUILDINGS (NOT TO SCALE)

NOTE: FURNISH ONE MATCHING PLUG FOR EACH RECEPTACLE.
TURN OVER TO OFFICER IN CHARGE.

PANEL - "A"
FIRE ALARM
CONTROL PANEL
TELEPHONE CABINET



HYDRAZINE FACILITY - POWER PLAN 1619
SCALE: 1/4" = 1'-0"

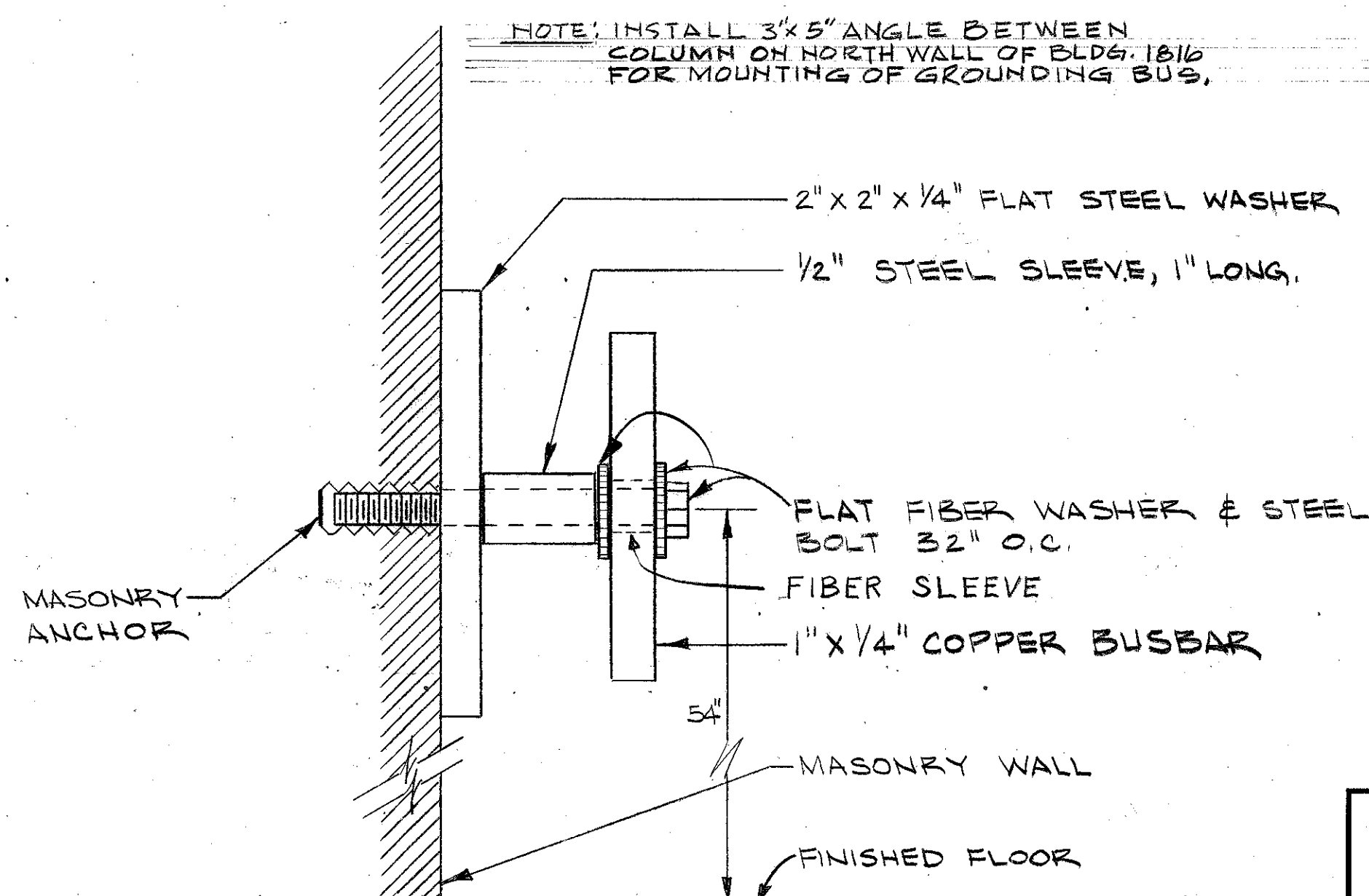
COPPER-BRONZE, SPRING-LOADED
BATTERY CLAMP WITH INSULATED
HANDLES FOR GROUNDING
CONNECTION TO DRUMS BY
GOV'T.

#8 PHOSPHOR BRONZE STRANDED
CONDUCTOR WITH GREEN COLORED
INSULATION JACKET, 6 FEET
IN LENGTH.

THREADED MANUAL
CLAMP ADJUSTMENT
J-CLAMP WITH ZAW
TO SUIT STANDARD
BARREL LIP,
CONTACTS FOR
PAINT-PIERCING DUTY

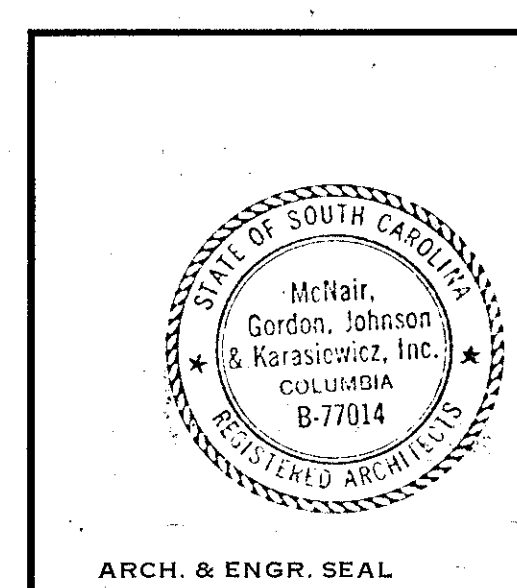
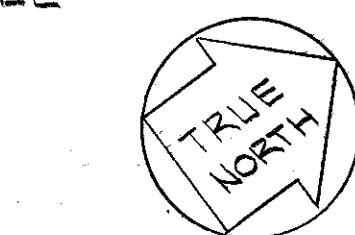
TYPICAL ANTI-STATIC BONDING & GROUNDING SET
FOR HYDRAZINE BUILDING (NOT TO SCALE)

NOTE: THIS CONTRACTOR SHALL FURNISH TWELVE (12)
GROUNDING SETS, TURN OVER TO OFFICER IN
CHARGE.



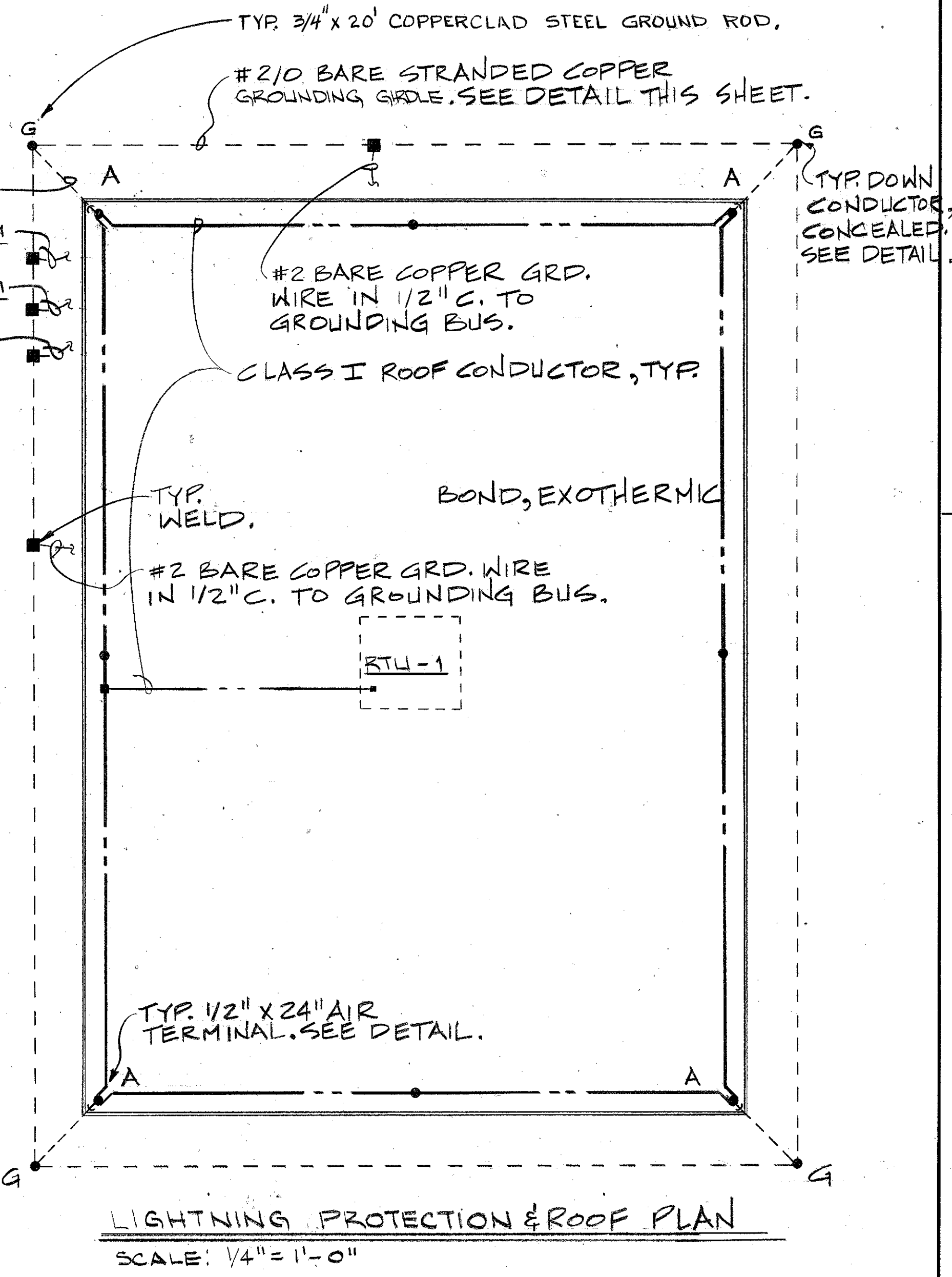
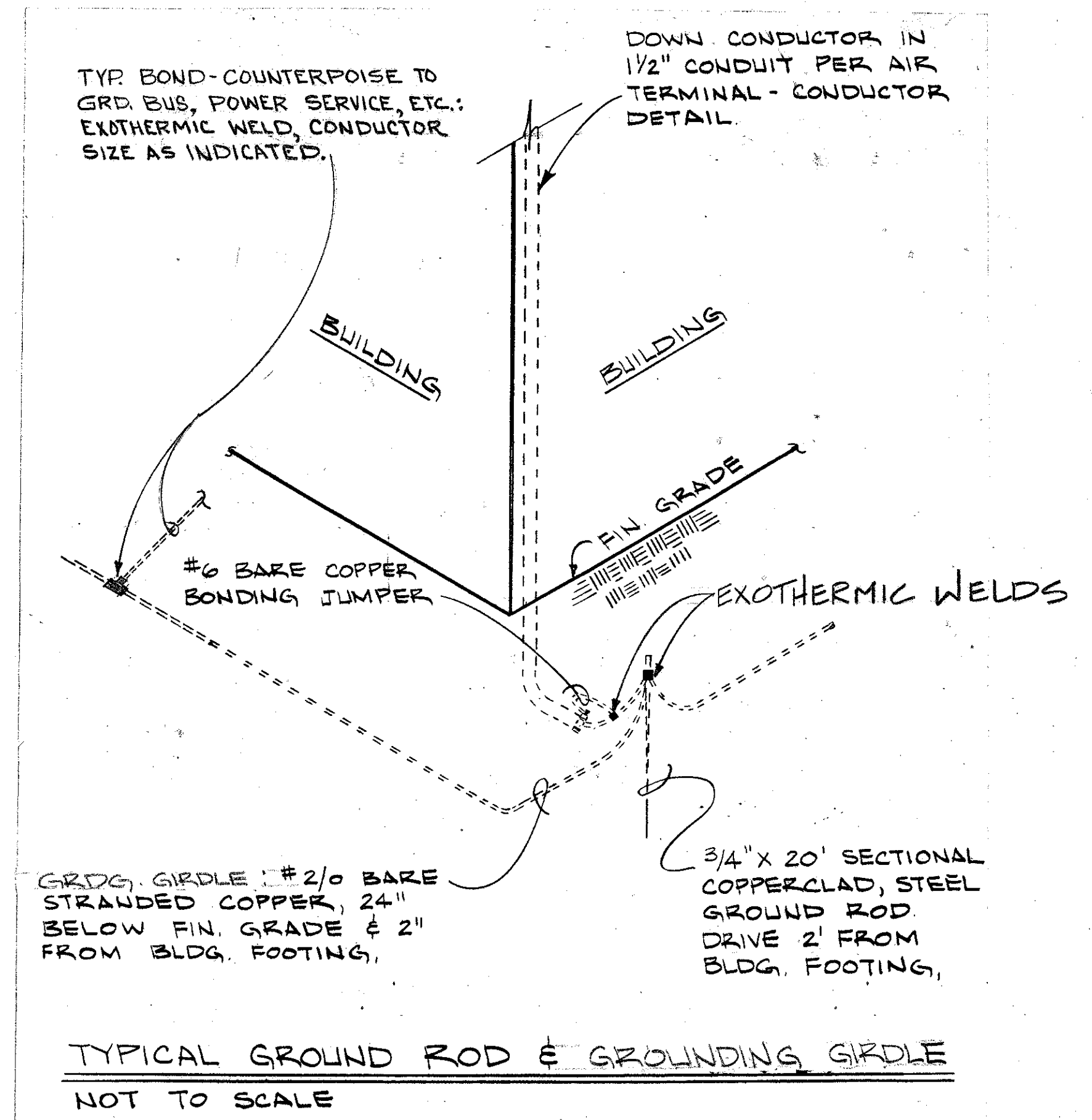
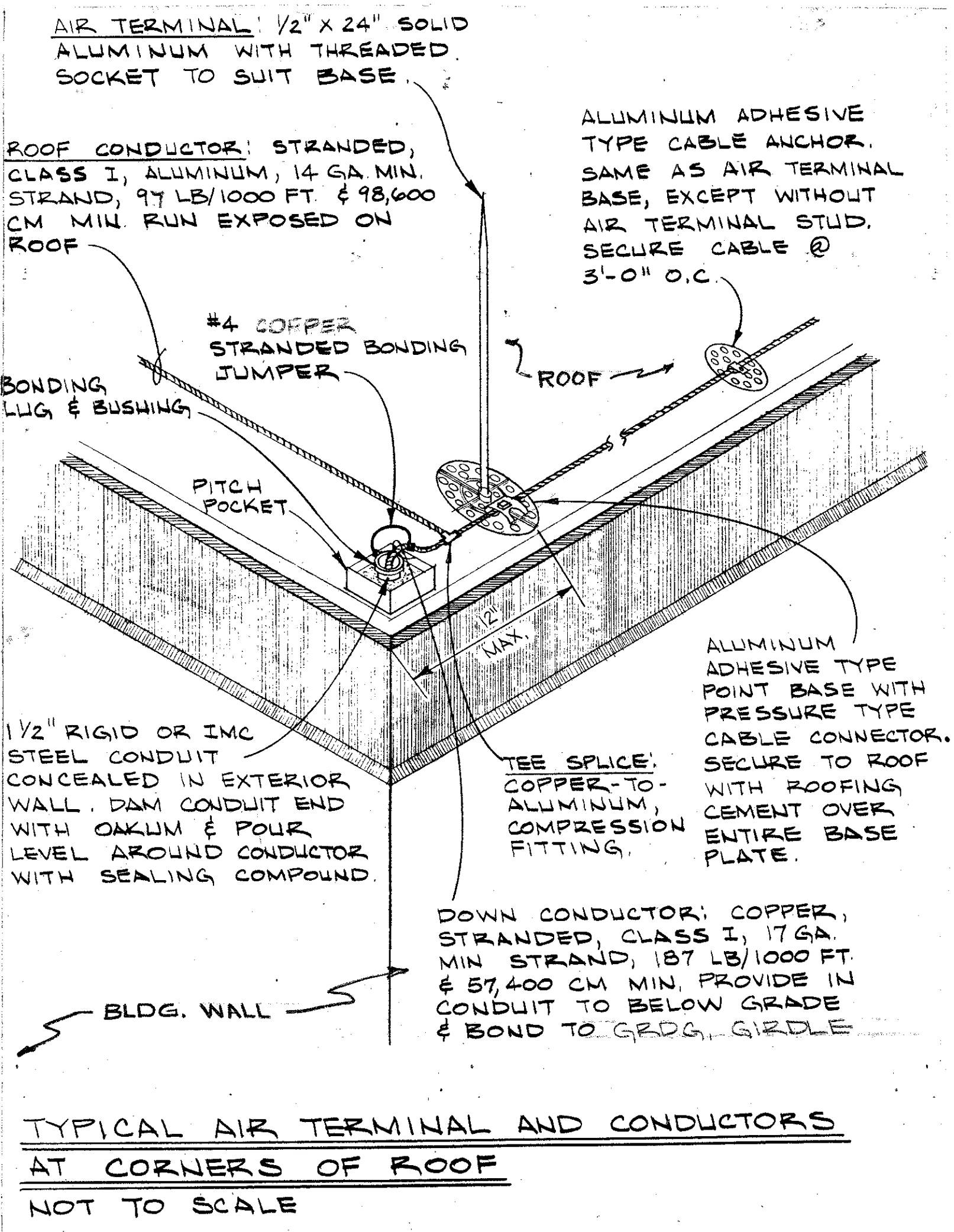
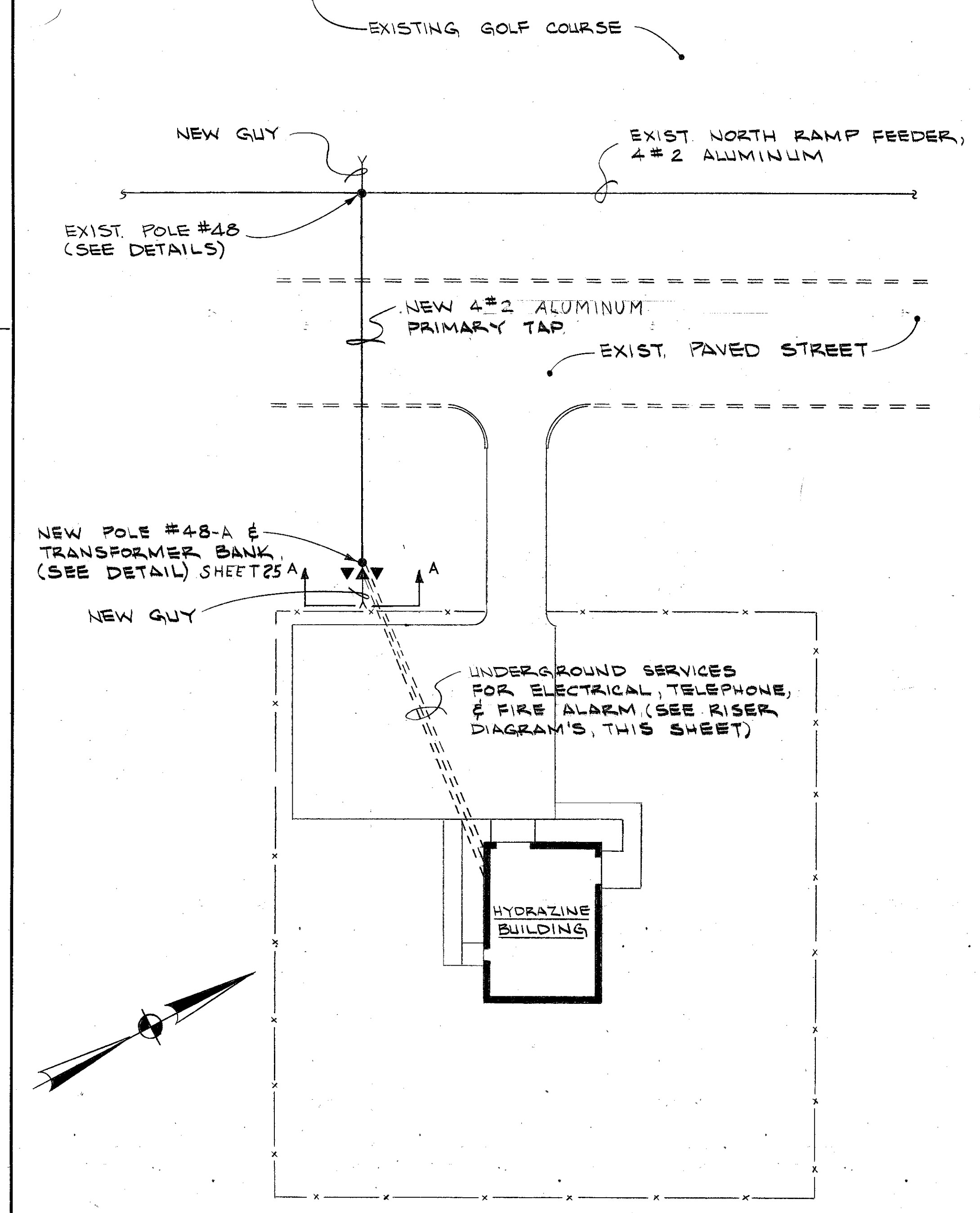
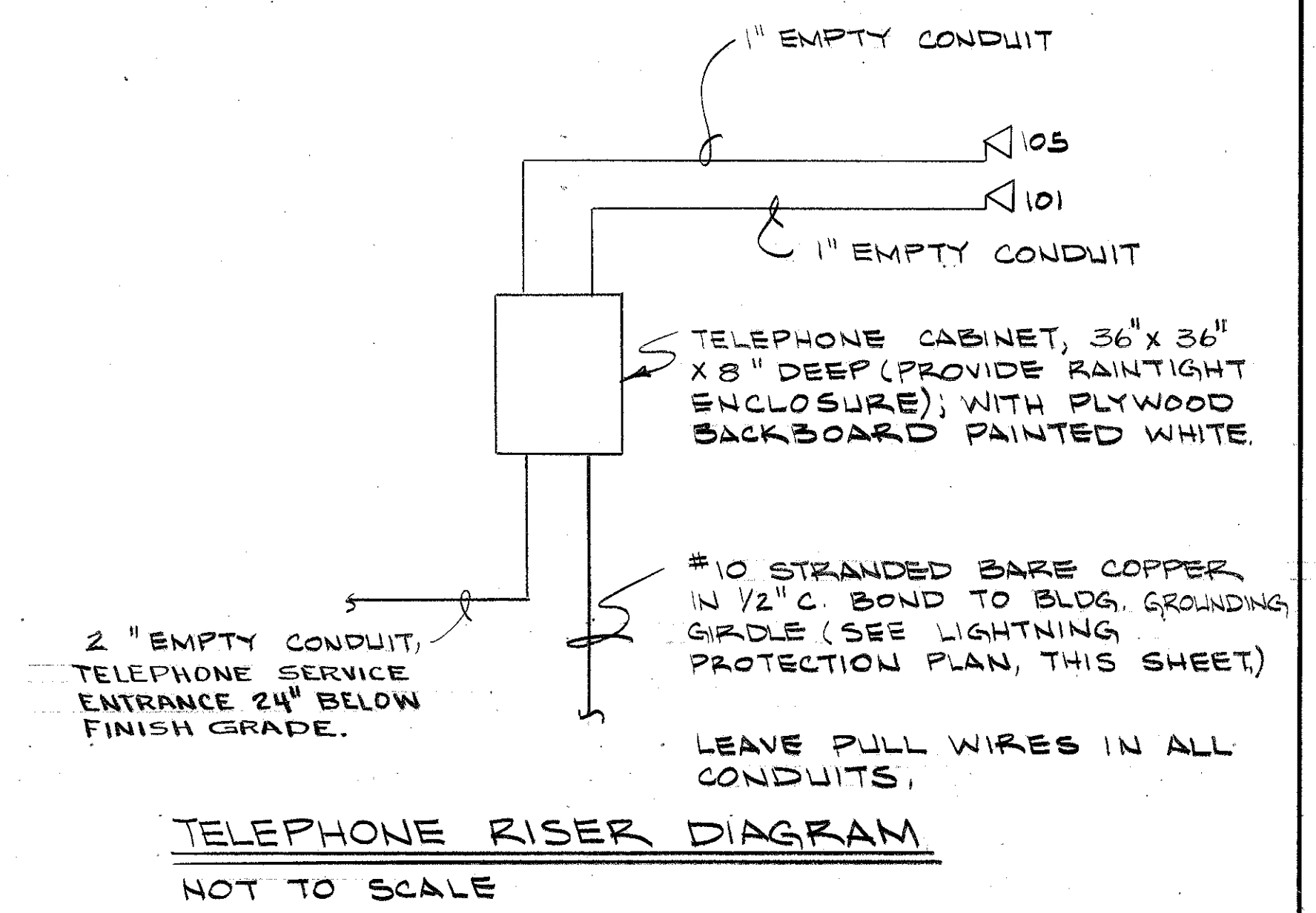
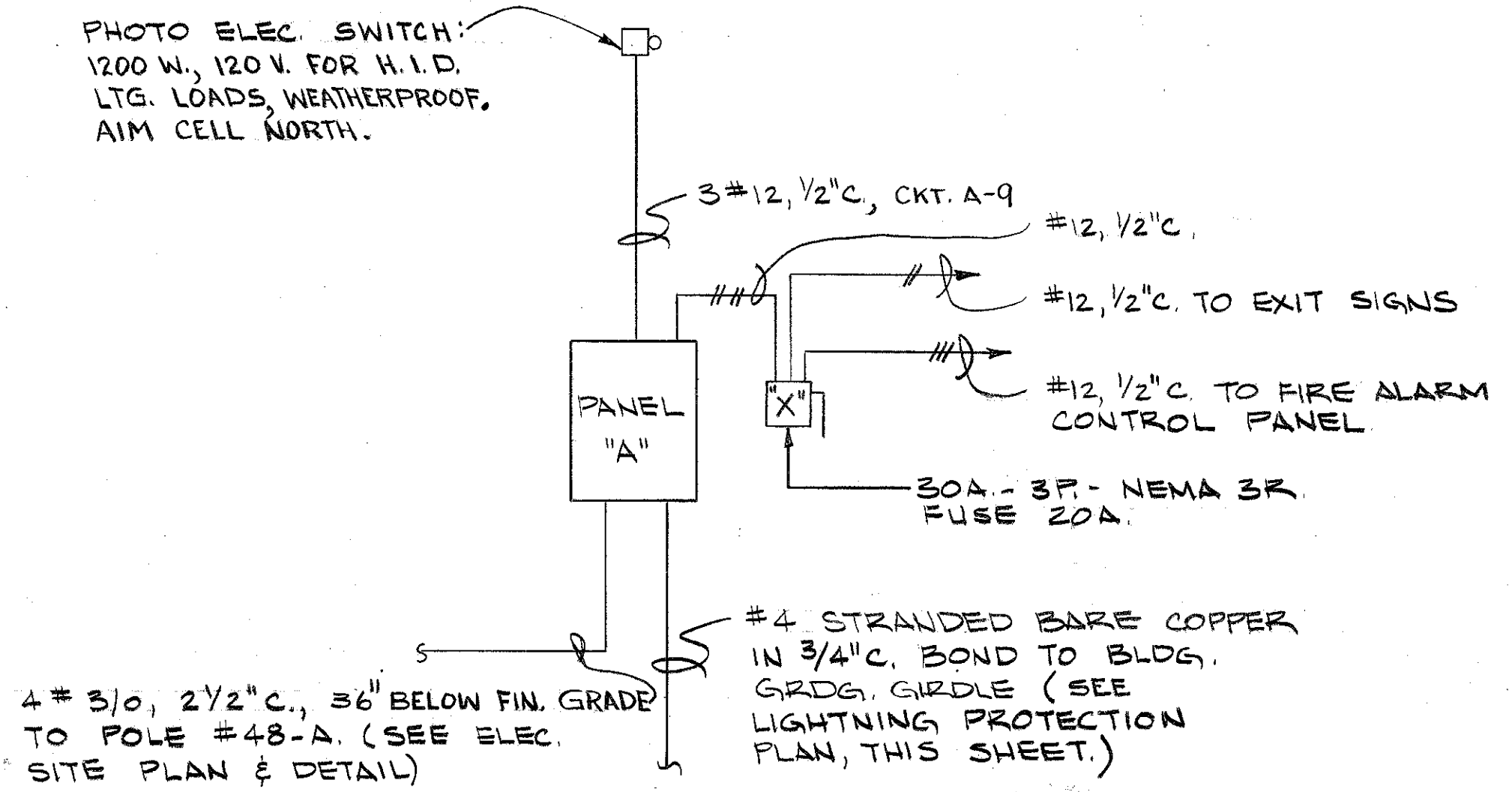
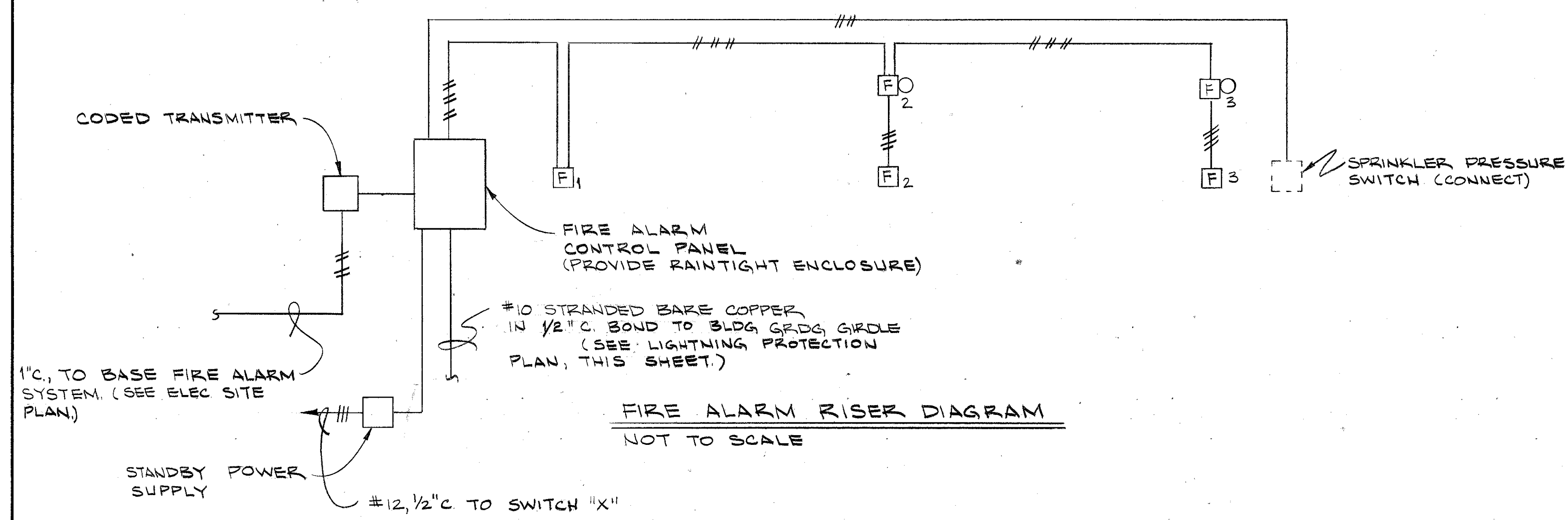
GROUNDING BUS DETAIL FOR MISSILE
ASSEMBLY & HYDRAZINE BUILDINGS
NOT TO SCALE

0 1 2 3 4 5 6 7 8 9 10 11 12
SCALE: 1/4" = 1'-0"

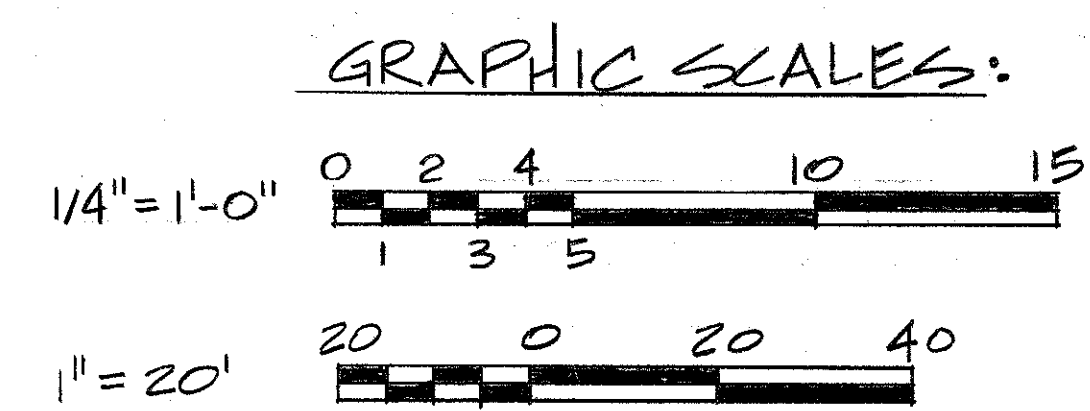


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McClair, Gordon, Johnson & Karasiewicz ARCHITECTS - ENGINEERS - PLANNERS PO BOX 84 COLUMBIA, SC 29202	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND CHARLESTON, S.C.	
SHAW AIR FORCE BASE SOUTH CAROLINA	
1619 HYDRAZINE FAC. & BLDG 1816 ELECTRICAL PLANS.	
APPROVED DATE OFFICER IN CHARGE	NAVJAC DRAWING NO. 80091 5071276
APPROVED DATE EPG FOR COMMANDER, NAVJAC	CONSTR CONTR NO. 1162467-B0-C-0026 SHEET 23 OF 25

NOTE: ALL EQUIPMENT INSIDE BLDG. SHALL BE EXPLOSION PROOF, CLASS I, DIV. I, GROUPS C, D.



LIGHTNING PROTECTION DETAILS FOR MISSILE ASSEMBLY AND HYDRAZINE BUILDINGS



McNair, Gordon, Johnson & Karasiewicz ARCHITECTS-ENGINEERS-PLANNERS P.O. BOX 84 COLUMBIA, SC 29202

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.

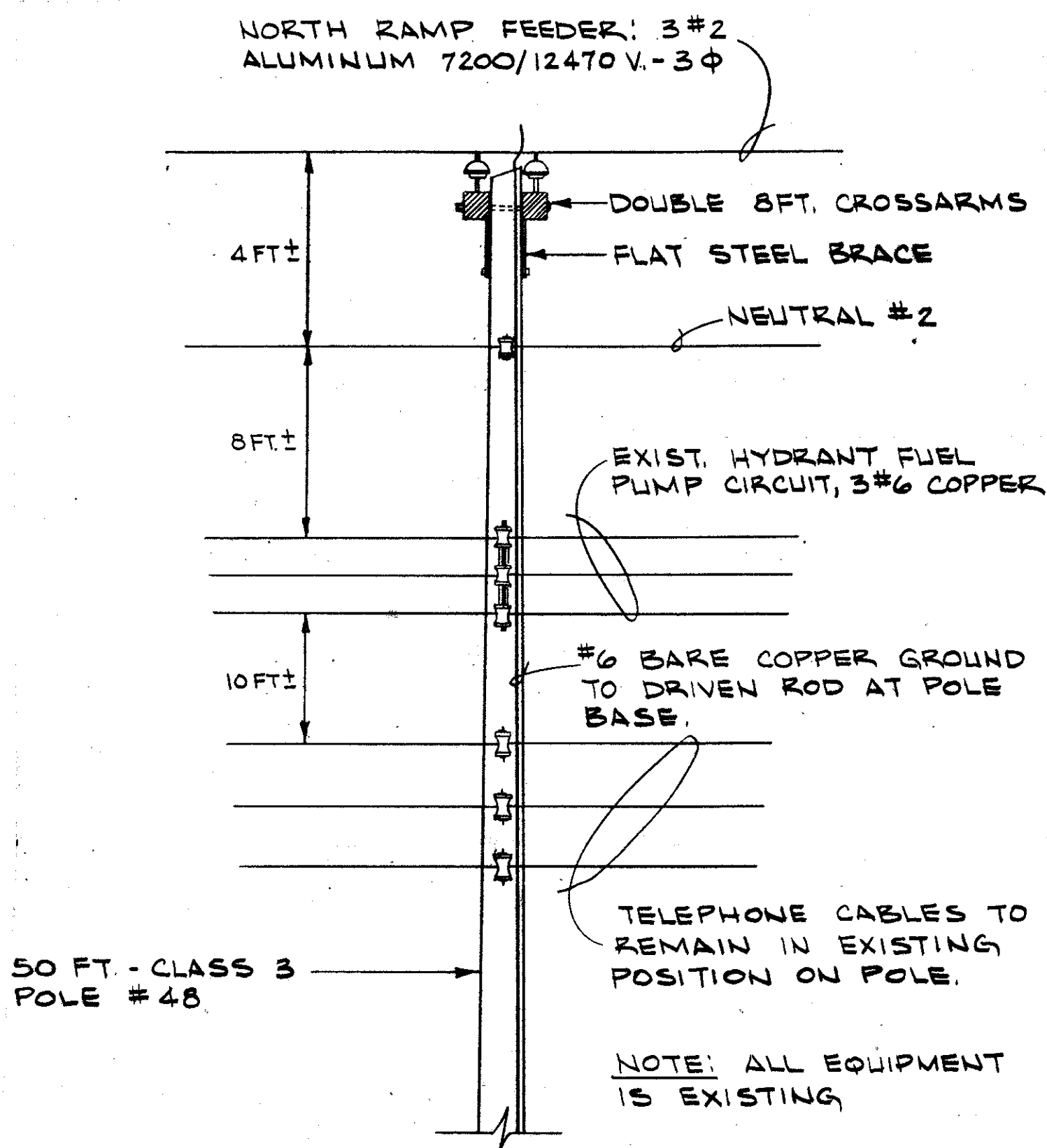
SHAW AIR FORCE BASE SOUTH CAROLINA

1619 HYDRAZINE FAC. & BLDG 1816 HYDRAZINE FACILITY ELECTRICAL PLANS & LIGHTNING PROT. DETAILS

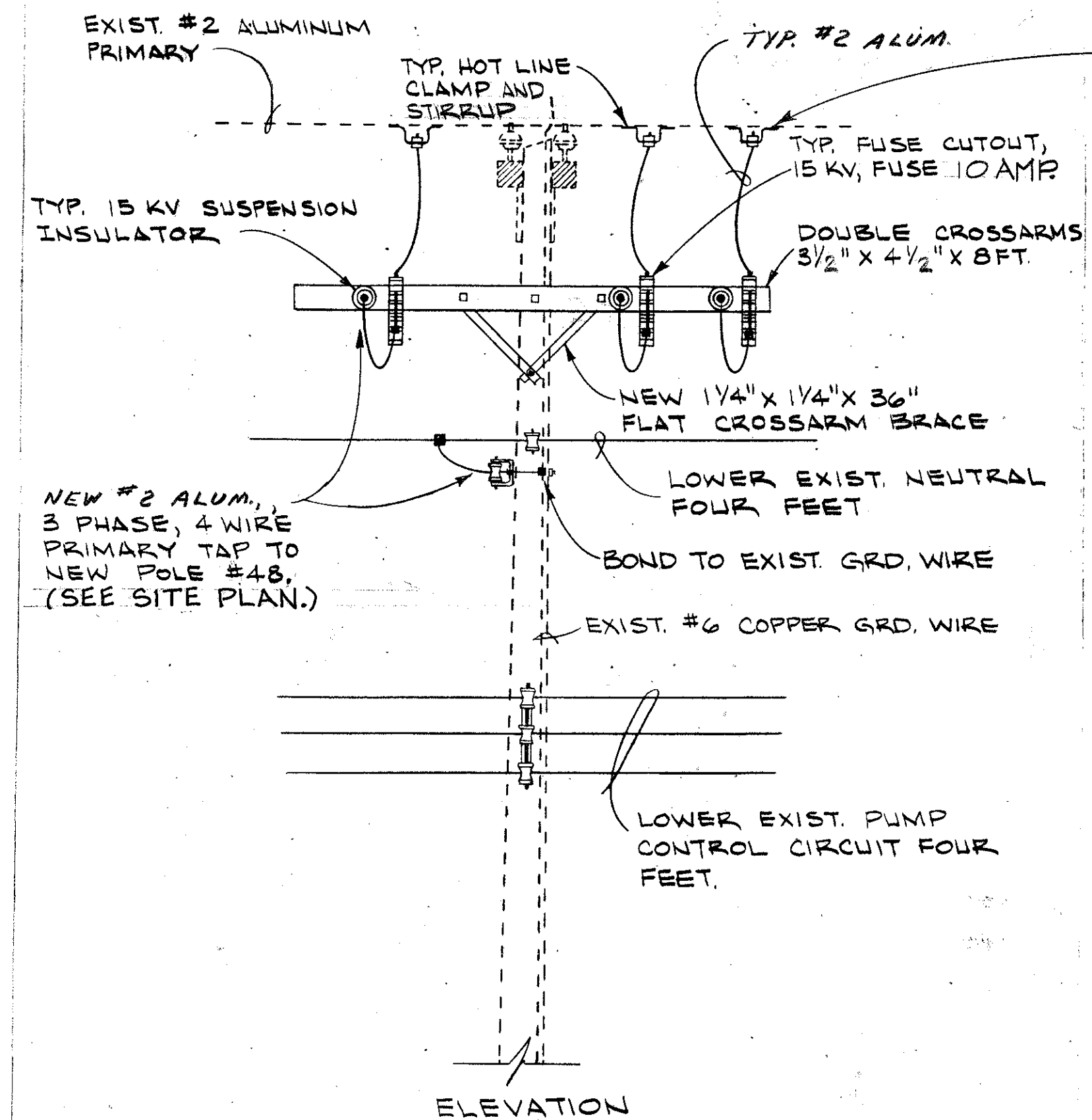
DESIGN: WHITE, DW CHK: WHITE SUPV: WHITE CH ENGR: WHITE SUBMITTER: DATE: 7/12/80 FIRM MEMBER (TITLE): SOUTHERN DIV-DESIGN DIVISION PDC: SOUTHERN DIV-DESIGN DIVISION APPROVED: DATE: 11/12/80 OFFICER IN CHARGE: DATE: 11/12/80 APPROVED: DATE: 11/12/80 EFD FOR COMMANDER, NAVFAC

SIZE: CODE IDENT NO. NAVFAC DRAWING NO. 80091 5071277 CONSTR CONTR NO. 1162467-80-C-0026 SCALE: AS NOTED SPEC 06-80-0026 SHEET 24 OF 25

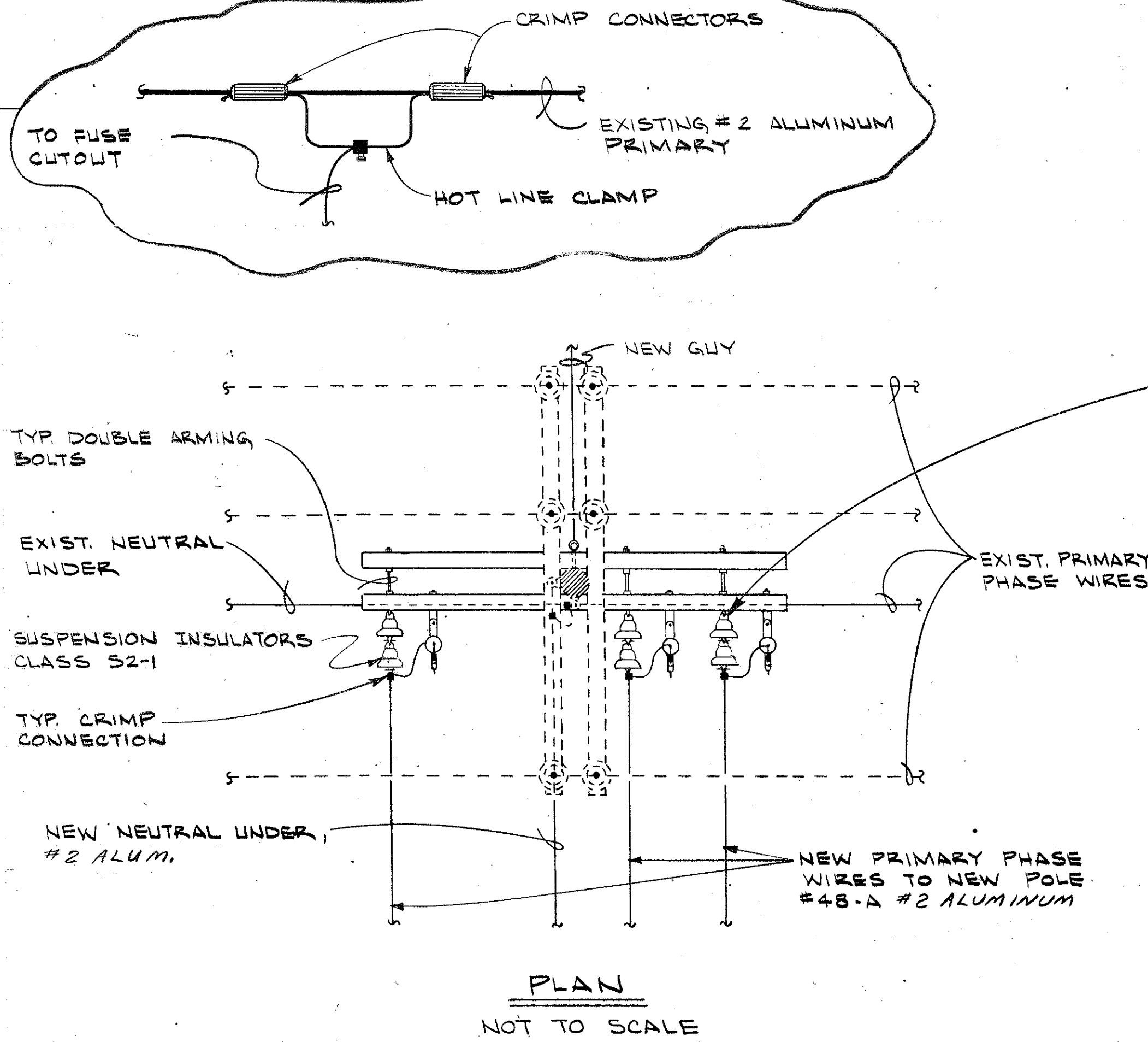
ARCH. & ENGR. SEAL



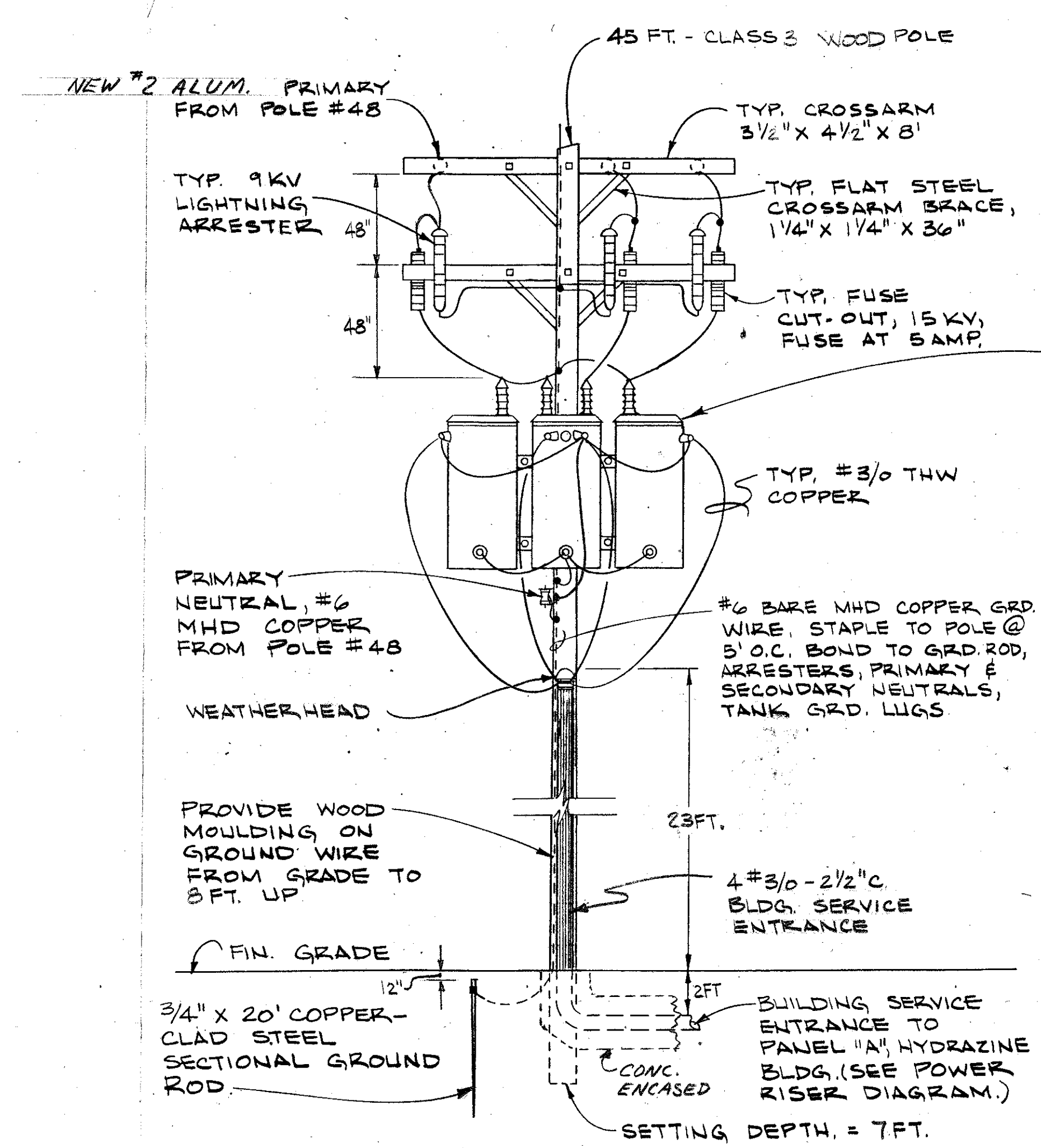
EXISTING POLE #48
NOT TO SCALE



NEW CROSSARMS & PRIMARY TAP AT POLE #48
NOT TO SCALE



- NOTES: CONSTRUCTION AT POLE #48
- EXISTING CONSTRUCTION
 - NEW CONSTRUCTION
 - LOWER EXIST. NEUTRAL & PUMP CONTROL CIRCUIT 4 FT. ON EXIST. POLE #48.
 - PROVIDE NEW PRIMARY TAP-CROSSARMS, FUSES, CONDUCTORS, INSULATORS, ETC. AS INDICATED.

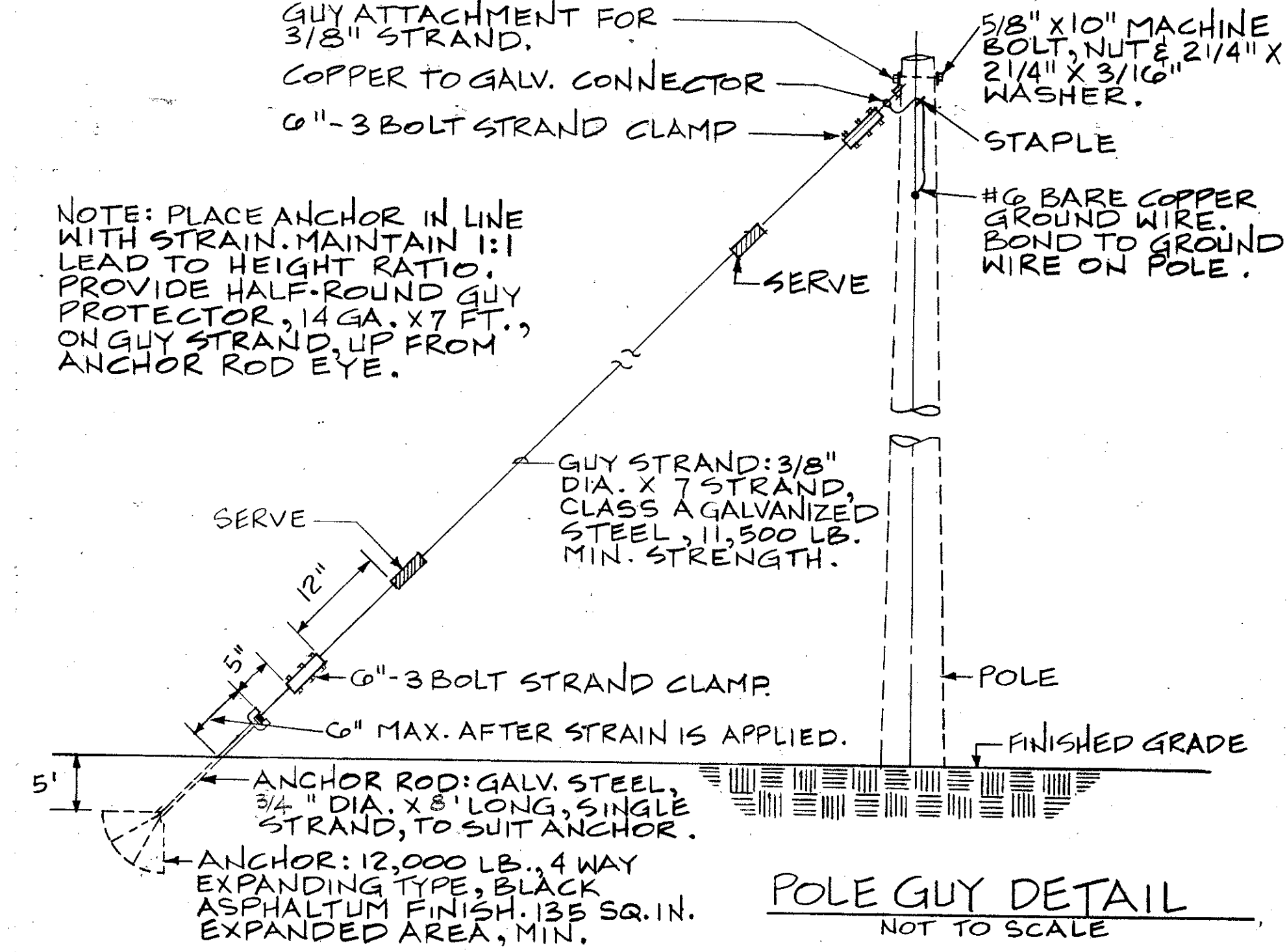
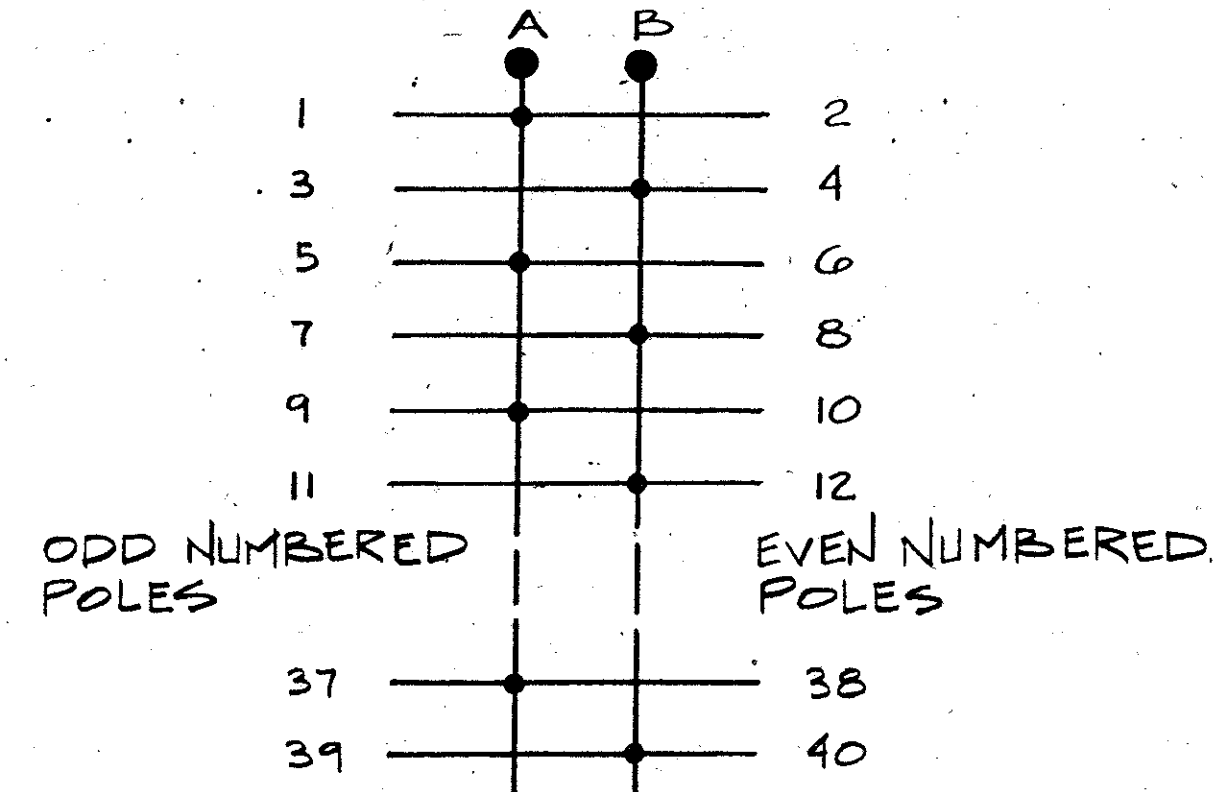
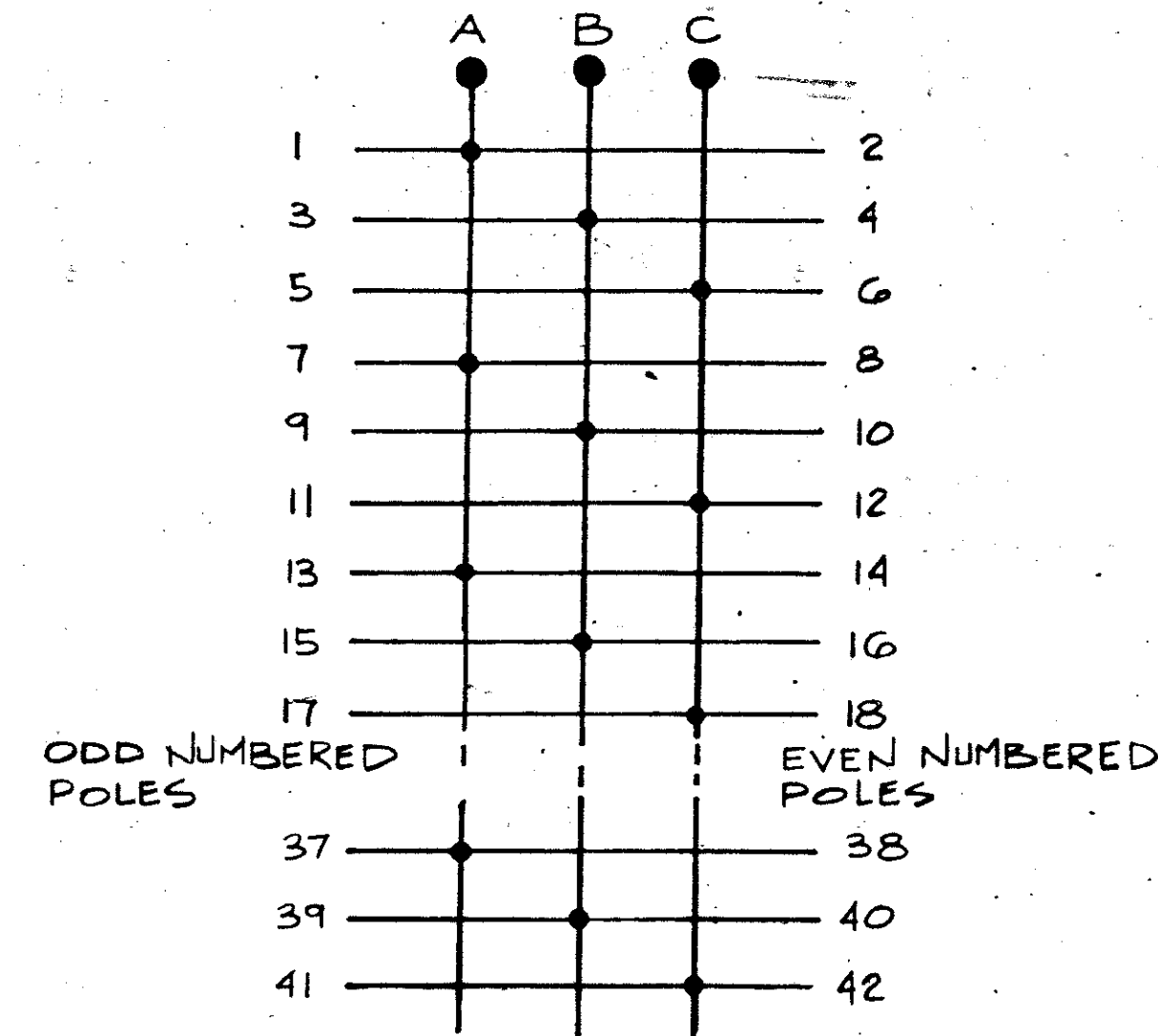


NEW POLE #48A AND TRANSFORMER BANK FOR HYDRAZINE BUILDING
NOT TO SCALE

NOTE: PROVIDE CONDUIT RISERS ON POLE, OPPOSITE SIDE, FOR FIRE ALARM & TELEPHONE, SIZES PER RISER DIAGRAMS. INSTALL F.A. WEATHERHEAD AT 20 FT., TELEPHONE WEATHERHEAD AT 18 FT. HEIGHTS.

CONNECT FIRE ALARM CONDUCTORS TO BASE FIRE ALARM CIRCUIT AS DIRECTED BY OFFICER IN CHARGE.

TELEPHONE CABLES BY GOVT., LEAVE #10 G.I. PULL WIRE IN SERVICE CONDUIT.



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McMAIR GORDON JOHNSON & KARASIEWICZ ARCHITECTS-ENGINEERS-PLANNERS 40 BOX 84 COLUMBIA SC 29202	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.	
SHAW AIR FORCE BASE SOUTH CAROLINA	
HYDRAZINE FAC. & BLDG 1816 ELECTRICAL DETAILS.	
DESIGN: WHITE, D.W., CHK: WHITE, D.W.	DATE: 11/18/80
SUPV: WHITE, D.W.	DATE: 11/18/80
SUBMITTED BY: WHITE, D.W.	DATE: 11/18/80
BY: WHITE, D.W.	DATE: 11/18/80
FOR: SOUTHERN DIVISION	DATE: 11/18/80
APPROVED: [Signature]	DATE: 11-17-80
OFFICER IN CHARGE: [Signature]	DATE: 11-17-80
APPROVED: [Signature]	DATE: 11-17-80
FOR: SOUTHERN DIVISION	DATE: 11-17-80
SIZE: F	CODE IDENT NO: 80091
SCALE: AS NOTED	NAVJAG DRAWING NO: 5071278
	CONSTR CONTR NO: UG2467-80-C-0026
	SHEET 25 OF 25